NOV 15 1910

Containing a Christmas Gift Supplement

VOL. VIII. No. 4 $1.00 A YEAR

NOVEMBER, 1910

SELLING ELECTRICITY

The Magazine of Electrical Progress

A Sign With Character

THE progressive, up-to-date merchant—the kind of merchant who buys an electric sign—wants, above all things, to maintain the individuality and character of his store. He does not want a sign like other signs—he wants something distinctive and "different."

VALENTINE

makes signs that have character, individuality, distinctive quality—signs that are appropriate, artistic and dignified.

Here is pictured a characteristic VALENTINE product—one that the progressive music dealer will appreciate and desire. It shows a figure of Pan playing his pipes, while the letters flash on and off. The sign is only 5′ 6″ x 12′ in size—large enough for a big store—small enough for the dealer who counts cash carefully.

Isn't there a music house in *your* town to whom you can sell this attractive sign?

Write for complete specifications and price.

VALENTINE ELECTRIC SIGN CO.

20 North California Ave. :: :: :: :: Atlantic City, N. J.

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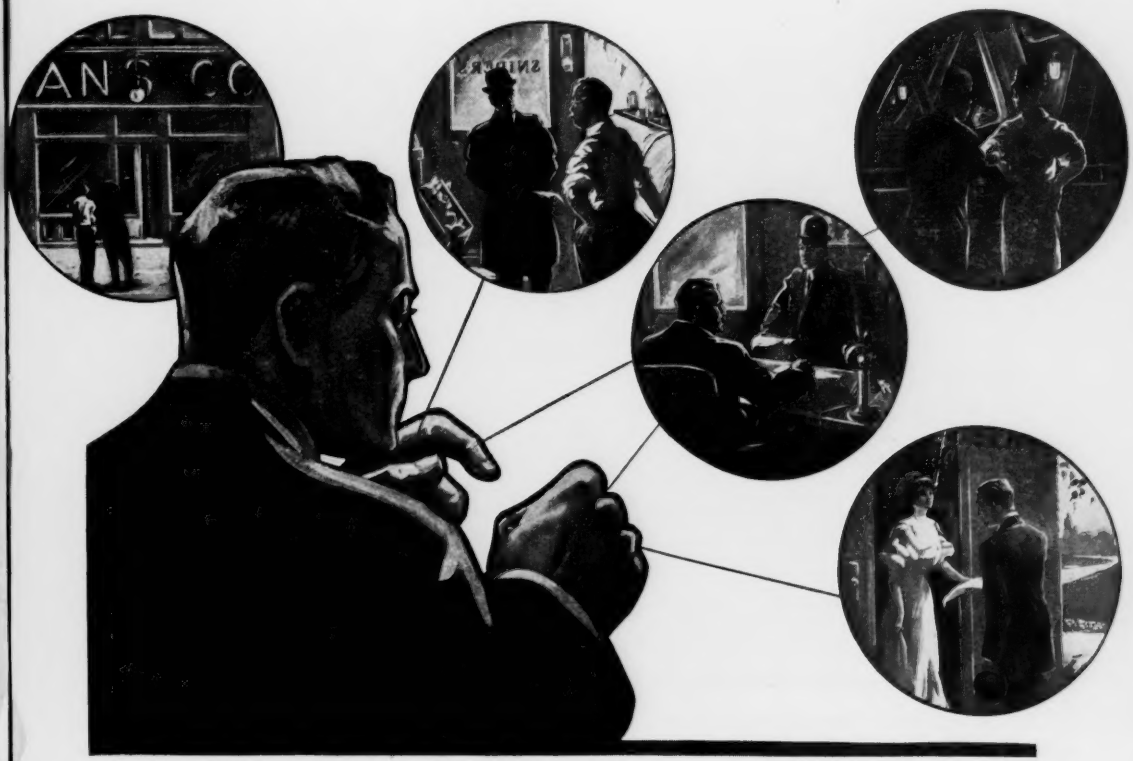
No matter HOW close your grasp on your customers, there are always lighting conditions which call for peculiar treatment—illuminating engineering problems which require the skill of the TRAINED specialist. The Buckeye Electric Company will gladly assist you in handling difficult or unusual lighting installations.



The central station man, with his many complex problems of generation, distribution, service and policy, cannot expect to be a specialist in incandescent lamps. Nor need he be.

It is the policy of the Buckeye Electric Company to assist its customers in every way to increase the scope, satisfaction and profits of their lighting business. With a 100-man organization specializing in this one direction, it is but natural that our services should be of great practical value, not only in illuminating engineering but in all collateral work.

Having brought all types of Buckeye Lamps to a point of practical perfection and having built up a lamp organization which renders service second to none, the Buckeye policy now is to create and develop business for its customers through the work of its many specialists. The services of these experts are at your command.

THE BUCKEYE ELECTRIC COMPANY

CLEVELAND

CHICAGO PITTSBURG BOSTON DALLAS

The electricle vehicle industry is doing more than anything else to build up your "off-peak" load and increase your profits—and

The New Edison Storage Battery

is doing more to build up the electric vehicle industry than anything since the industry began.

The Edison equipped vehicle is giving practically double the mileage of vehicles equipped with the lead battery. That means more business for you.

And every vehicle that goes on the road equipped with an Edison Storage Battery is equipped to *stay* on the road. That means that the Edison user will be buying current while the lead battery user is paying for repairs.

Besides, the life of the Edison is many times that of the lead battery—so that the Edison user is an enthusiastic and *permanent* customer while the lead battery user is only a temporary and disgruntled one.

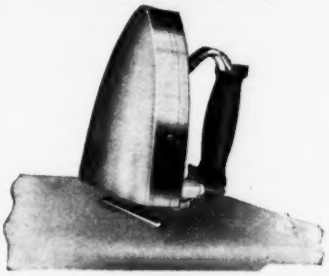
The Edison is radically different from all other storage batteries. There is no lead or acid in its construction. The plates are nickel and iron in an alkaline (potash) solution. There is no sulphation—no deterioration. It is not injured by over-charging, by too rapid discharge or by standing idle either charged or discharged for any period. Its weight is about half, per capacity, that of the lead battery.

The records now being made by pleasure cars and by the Lansden and other trucks are the best indications of what the Edison Storage Battery is doing for the electric vehicle industry—*and incidentally for you.*

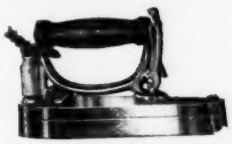
It's up to you to boost for Edison equipment in every electric vehicle sold in your vicinity.

Edison Storage Battery Co., 123 Lakeside Ave., Orange, N. J.

The Cutler-Hammer Iron
The Iron for Practical People



Household Iron
Made in 5, 6 and 7-pound sizes



Sleeve Iron
Has detachable handle

Tailors' Goose
Made in 12, 15 and 20-pound sizes

Disc Stove

CUTLER-HAMMER

ELECTRIC HEATING DEVICES

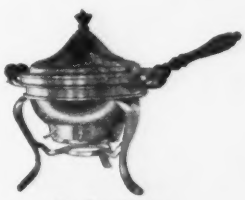
have many radically new and exclusive features. They are made for every purpose and will give a new impetus to central station "day load" campaigns.

Cutler-Hammer Portable Water Heaters (two styles) and Instantaneous Water Heaters (made in five styles) are the latest electrical appliances in their line. They open up a new field for central station business and they provide the greatest convenience to the user.

The Cutler-Hammer Electric Iron has an evenly heated ironing surface, and—heat-retaining qualities like the old-fashioned iron.

The heating unit lies flat in the bottom of the iron and the contact posts, to which the plug is attached, are riveted to this unit, insuring against any interior troubles.

Improved designs are embodied in the Cutler-Hammer Curling Iron Heater, Shaving Mug, Radiators, Disc Stove, etc.



Chafing Dish

Radiator
Made in three sizes

A 32 PAGE BOOKLET

IS YOURS FOR THE ASKING
SEND YOUR ADDRESS
TO-DAY

This book contains complete and interesting descriptions and full-page illustrations of electric heating devices. As some of these devices are entirely new and many radically different, you should get a copy at once.

Portable Water Heater
Made in 3 and 4-quart sizes

The Cutler-Hammer Mfg. Co.

MILWAUKEE, WISCONSIN

NEW YORK: Hudson Terminal (50 Church St.)
PITTSBURG: Farmers' Bank Bldg.
PHILADELPHIA: 1201 Chestnut St.
CHICAGO: Monadnock Block
BOSTON: 176 Federal St.
CLEVELAND: Schofield Bldg.
PACIFIC COAST AGENTS: Otis & Squires, 155 New Montgomery St., San Francisco

The Simplex Electric Chafing Dish

appeals to the hostess—is a seasonable suggestion, and in your customer's home will be seen by her friends and those in her social set. This means a valuable demonstration of the merits of Electric Cooking—increase in sale of current and the sale of other simplex devices, especially such as are suitable for holiday gifts.

SIMPLEX QUALITY

Write for "Selling Helps."

SIMPLEX ELECTRIC HEATING CO

Cambridge, Mass.

Monadnock Block, Chicago
612 Howard St., San Francisco

WESTINGHOUSE ELECTRIC

Christmas

for the Central Station Man and Dealer

Prepare to get your share of the Christmas Trade. People *will* buy presents—many will buy electrical presents *from you* if you make an effort to sell.

Why Not

do some special window decorating and newspaper advertising to draw the attention of the Christmas shoppers.
Send to us for copies of "ads" that will appear in popular magazines, newspaper copy and illustrations, street car and display cards, and other selling helps.

Then See

that you are well supplied with Westinghouse Irons, Toaster-Stove, Disc Stoves, Luminous Radiators, Air Heaters, Sewing Machine Motors, etc.

Westinghouse Electric & Mfg. Co.
Pittsburg, Pa.

Sales Offices in all Large Cities

G I

"Of all the lamps in all the World
we aim to make the Best."

There is no easier or more profitable way of practicing economy than by using the highest efficiency incandescent lamps in your home, office or factory. At little additional cost they give more and better light, promote good health, lightening labor and increasing production.

G I

Every G. I. lamp, whether Carbon, Gem, Tantalum or Mazda, stands as a representative of the latest development in higher efficiency, i. e., economical lighting.

G I

Trouble and money saving G. I. lamps, the kind that make satisfied customers, can be obtained from your nearest G. I. dealer, or,

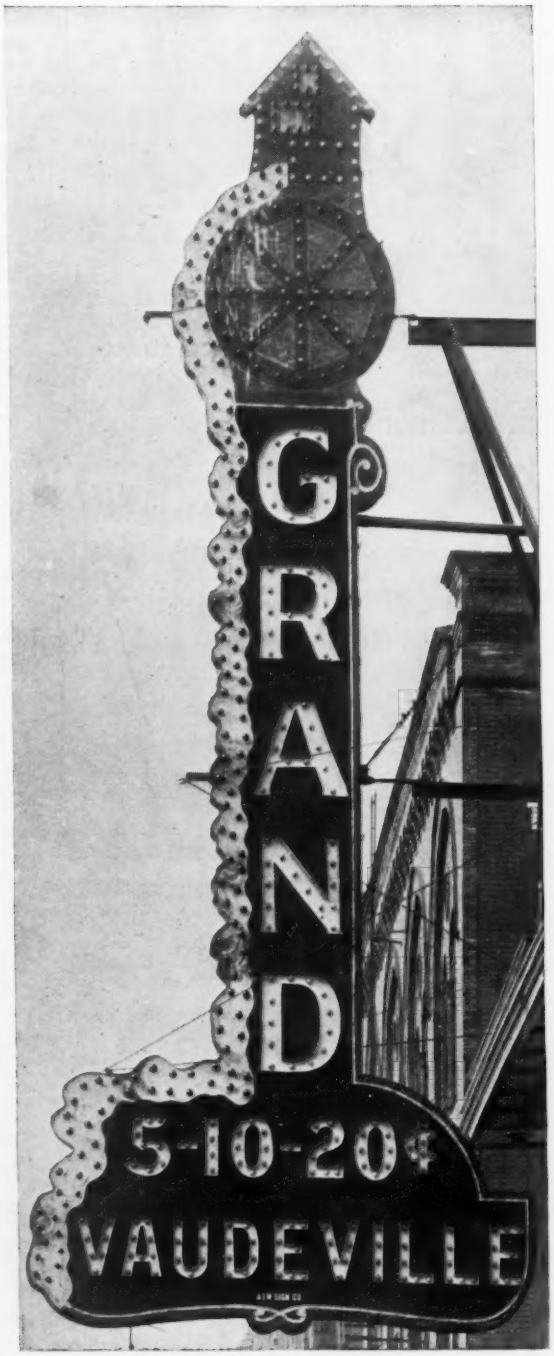
The General Incandescent Lamp Company
CLEVELAND, OHIO

BRANCH OFFICE

San Francisco, Cal., 405 Monadnock Bldg.
Los Angeles Cal., 693 Pacific Elec. Bldg.
Boston, Mass., 16 Devonshire St.
Dallas, Texas, 1311-12 Praetorian Bldg.
Seattle, Wash., 523 Colman Bldg.
New York, N. Y., 30-32 E. 20th St.
Philadelphia, Pa., 244 Arch St.

G I

In writing to advertisers, mention "Selling Electricity"



Theatres, Picture-shows and Vaude-ville Houses offer great opportunities to develop the sign builders' art.

We will originate Novel Designs for your local Amuse-ment Houses upon request.

Send us the Data to-day.

The Old Water Wheel revolves, water running down edge of sign, and words and figures flash separately.

Contains 850 lamps.

The
A & W
Electric Sign Co.
Cleveland
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FAIRBANKS-MORSE

Electric Motors
½ h.-p. to 500 h.-p.
Alternating Current or Direct Current

Will Help Sell Current

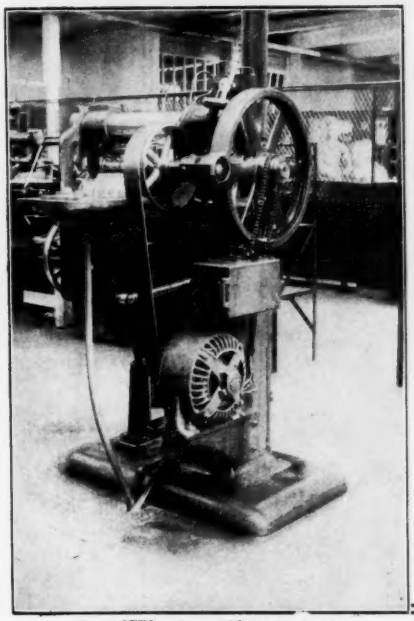

Fig. E 2776. One of 50 F-M Induction Motors in this factory.

The satisfactory service rendered by over 20,000 Fairbanks-Morse motors now in use makes it easy to put more of them on your line.

Motor drive advantages will appeal to everyone if properly presented; our salesmen know how to do this, and stand ready to sell motors for you. Do you want more motors on your line? Advise us and send for Bulletin No. 1402 FC.

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Kansas City, Mo.
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Minneapolis, Minn.
Milwaukee, Wis.
Salt Lake City, Utah
Spokane, Wash.
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Taft, Cal.
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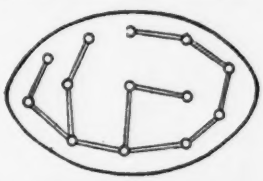
Canadian Fairbanks Co., Ltd., Sole Agents for Canada

YOUR !! RESIDENCE LIGHTING BUSINESS IS NOW LIKE THIS

ALMOST ENTIRELY LOSS

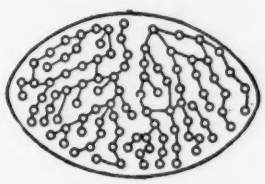


High Individual Construction Cost

Low Income per Year per K. W.

WOULD YOU NOT LIKE BUSINESS LIKE THIS ?

LARGE PERCENTAGE OF PROFIT



Low Individual Construction Cost

High Guaranteed Income per Year per K. W.

One concern took 300 unwired residences away from the Gas Co. in six weeks.

You can do as well if you will write for information.

Excess Indicator Co., 241 West 42d St., New York

Electric Signs
Electric Specialties

C. D. Winters

Benjamin Wall

We have built and sold for central stations 10,000 electric signs. Send us your prospects. Sketches and estimates furnished promptly.

Wall-Win Company

114 New Jersey Railroad Avenue

NEWARK, N. J.

SELLING ELECTRICITY

VOLUME VIII NUMBER 4

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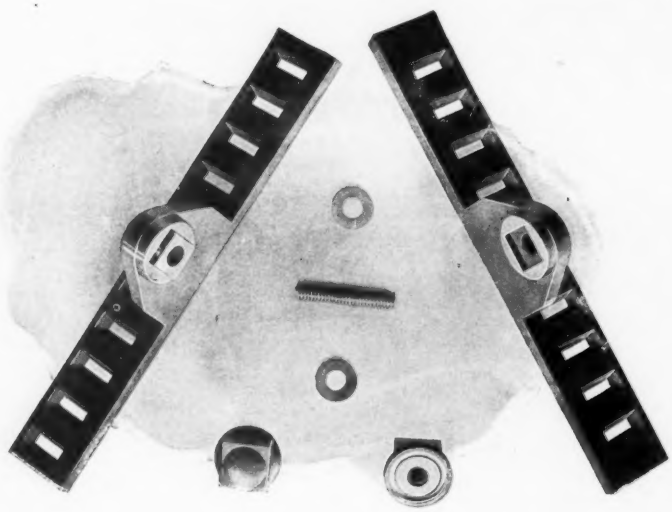
A DISTINCT ADVANCE IN VEHICLE BATTERY DESIGN



We make vehicle batteries both with the old style lead-burned connection and with the "National" Bolt Connectors. We recommend the latter—a solution of all the difficulties of the old style—an exclusive feature of "National" Batteries.

Corrosion is prevented by the grease-packed annular recess in nuts. Stud is electrically inert—simply squeeze together the lugs which are the conductors. Contact between lugs is absolute. Hundreds of installations without one failure.

All the disadvantages of the old style lead-burned battery avoided. It is no longer necessary to saw apart the lugs, to call upon an expert lead burner and outfit to reburn the lugs every time cells are inspected or cleaned. Only tool required is a wrench.

Compare 1 1-2 *hrs. to take apart and re-assemble a* 44 *cell battery having* "National" *Bolt Connectors with* 8 *hrs. to take apart and re-assemble a duplicate battery with burned connections.*

Write to our nearest office for complete information on "National" Batteries for any service.

The United States Light and Heating Co.

GENERAL OFFICES: 30 CHURCH ST., NEW YORK

New York Boston Buffalo Cleveland Chicago St. Louis San Francisco

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SELLING ELECTRICITY

Edited by FRANK B. RAE, Jr. EARL E. WHITEHORNE, Managing Editor

A Central Station Campaign for Electric Vehicles

Abstract of Paper Read at the First Annual Meeting of the Electric Vehicle Association of America.

By Frank M. Tait, General Manager, Dayton Lighting Co., Dayton, Ohio.

Almost every town or city, with an electric current supply available, has had some experience with the electric pleasure automobile. The early difficulty was the lack of proper care for the battery, and the low mileage from excessive friction losses. In the last few years, with the advent of lighter cars with an all-around better design, the great reduction in friction losses, the better motor and controller equipments, and the improvements in the battery proposition, the electric pleasure vehicle is very rapidly coming into general use as the city and suburban car.

F. M. Tait

The sight of all sorts of electric pleasure vehicles driving about the streets has a greater effect on the central station's territory than the immediate sale of current for the batteries in the cars. It has the indirect effect of instilling into the public mind the "electric idea," which has its results in more light and power business in various directions, the good and far-reaching effects of which may come home to the central station's distributing mains from unlooked-for sources. If the citizen sees greater and increasing numbers of electric pleasure vehicles moving about the streets, he naturally assumes they must be satisfactory, and begins to investigate and becomes a prospect for an electric, and every additional car put upon the streets makes the sale of the next two that much easier and quicker.

A plan that is very successfully followed in bringing the electric vehicle to the favorable notice of the ladies, to whom it particularly appeals, is to have the manufacturers' demonstrators or the central station's vehicle man keep on the lookout for the various afternoon bridge whist and other small gatherings that are scheduled in the town, offer to call at their homes and deliver several of the ladies in the electric victoria or coupe to the house

where the function is being held, and later call for them and return them to their homes. Only a few ladies can be handled in this way by one demonstrator, but where a number of vehicle salesmen are on the ground, it is often possible to take the majority of the ladies to the party. Of course, as little reference as possible is made to the ladies about the demonstration feature on the trial trip, and this is reserved for a few days later, when another call is made to make more of a business demonstration. In this way the seeds are sown for the desire for an electric, which soon becomes a real want, particularly if some of the prospects' friends happen to have electrics, and before long the man of the house finds another way to make his family happy and orders the car.

DAYTON FACTORIES USE 10,000 HORSE POWER IN MOTORS FROM OUR LINES
THE DAYTON LIGHTING COMPANY
ELECTRIC LIGHT & POWER CHEAP

Fig. 1—Dayton Lighting Company Truck in Commercial Parade

Another plan that has resulted in a number of electrics going into regular service, is to place at some busy doctor's disposal an electric coupe or runabout, and drive him around to his visiting list for a few days, especially when he is particularly busy. He begins to note how easy it is to operate, and without much thought; no slow horse to bother with; no trouble in cold weather; no gasoline motor car troubles; greater number of calls; and he usually becomes a good prospect. If the vehicle builders have salesmen on the ground they are all notified of any prospect for a pleasure vehicle, and the salesmen's rivalry for the business also helps the proposition of a quick sale.

To properly keep the electric pleasure wagon in good and constant operating condition is the one great thing that every central station should make its business to insure. One central station has a regular system of inspection in vogue, and while it does not maintain a garage for electric pleasure vehicles, it does have its vehicle man carefully overlook every electric vehicle in the city regularly, not less than once a month, although three electric garages are supposed to do the work properly and satisfactorily.

Accurate lists of every vehicle are kept in the office of the central station, and post-cards with return cards are sent out every three months to the users, soliciting information as to whether their individual electric automobiles are entirely satisfactory, or if not, what is wrong, and when the central station's vehicle man may call and see what should be done to make it right. These post-card replies serve as an extra check on the vehicle man's inspections and cause the user of the vehicle to feel that the central station is interested in the electric car, is keeping a close watch and will always be ready to lend a helping hand. It also provides the opportunity for assisting the user to decide for or against suggested work, by the electric garages, and places the garage people on their mettle to give good service and treat

Fig. 2—Another Truck featured in the same event

the electric pleasure car and its owner with proper consideration.

The accepted plan for the best and most satisfactory results to users, as well as the garages, seems to be to keep electric automobiles in separate garages where the smoke and gases from the gasoline cars will not injure the finish on the electric cars. A net flat charge, ranging from twenty-five dollars to thirty dollars per month for the average coupe or victoria runabout, seems to be the proper rate for public garaging, but does not include any tire or general machine repairs, simply the washing, polishing, current, and delivery of cars within prescribed limits from the garage. A satisfactory plan of selling current to public garages is by meter, with a rate that will net four cents per kilowatt hour after allowing the discount for prompt payment and with a minimum service charge averaging five dollars net per month per charging rheostat connected.

In the case of the private garage, buying current either through a rheostat or mercury arc rectifier, a meter rate (after discount for prompt payment) of six 1-4 cents net per kilowatt hour, with a minimum service charge of five dollars net per pleasure car per month, seems to be satisfactory.

With constant vigilance on the part of the central station vehicle man, this treatment has resulted in placing eighty-five electric pleasure vehicles on the streets of Dayton, Ohio, within the past two years, and the number is rapidly increasing. These cars are divided among all the well-known reputable types of electric automobiles, and the various electric vehicle and battery manufacturers have been most cordial in their feelings and in their active co-operation towards the introduction of the various vehicles.

To properly sell electric trucks and assist in their adoption in any territory, the central station must first have an electric truck or two of its own. It is difficult to understand how any central station can expect to have many electric trucks on the streets, with their batteries fed from its circuits, until this has been done. Trying to sell electric trucks, without having at least one electric wagon of its own, corresponds to selling electric current for lighting with the display rooms and business offices lighted with kerosene or candles. The central station should equip some suitable location with all the facilities for charging and handling electric trucks, and have men in its employ who are entirely familiar with the battery equipment under the vehicles. The smaller central stations, who argue that they cannot afford high salaried battery experts, can easily have some bright young man in their

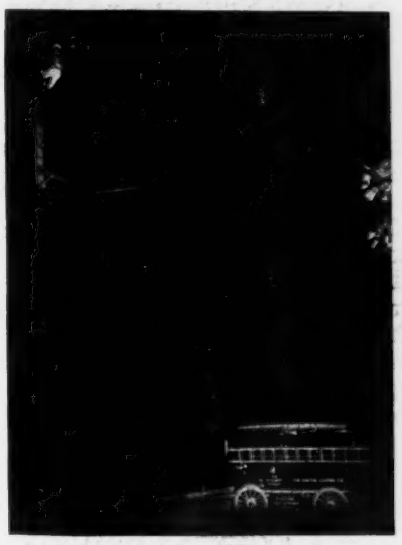


Fig. 3—A Dayton Truck on Night Trouble Work

employ who has a leaning toward storage battery work, trained at the works of the storage battery companies at a cost only of the young man's salary and expenses while he is absorbing the necessary knowledge.

A plan to interest possible purchasers of electric trucks is to tabulate a list of the various stores, express companies, etc., that have to do with the delivery of goods or drayage, and offer to loan a truck and a competent driver to go over their routes, now covered by the horse and wagon deliveries, and to allow their delivery man to check in the business done against the electric truck's record of the cost

of doing it. This showing will always be in favor of the electric truck, unless the work to be done is the sort that belongs to the gasoline trucks, like long and continuous hauls into the country. These trial propositions can be worked successfully with department stores, grocery stores, express companies, drayage concerns, laundry companies, delivery companies, butchers, bakers, etc. Careful records should always be kept of the weight carried, stops made, and all the vital data necessary to prove the superiority of the electric truck over the horse-drawn vehicle, as well as the gasoline truck, in many lines of delivery work. All electric vehicles should have careful records kept daily, of their entire mechanical and electrical performance, and these record blanks are easily obtainable from vehicle and battery manufacturers, or central stations operating electric vehicle departments.

The cut Fig. 2 illustrates a two-thousand-pound truck equipped with a band saw driven by an electric motor, all fed from the truck's battery. This truck recently went over the route of a commercial parade with an expert cabinet-maker sawing out various shapes from pieces of boards, while the stream of sawdust, leaving the saw, convinced the onlookers that it was actually doing business. Immediately following this truck, in the same parade, was a one-thousand-pound wagon loaded with electric irons as shown in the cut Fig. 1. These two trucks attracted a great deal of attention along the route, and many people were heard to say that there seemed to be no end to what could be done with electricity. It is this sort of publicity and practical demonstration of the use of electric current for propelling electric trucks, that broadens the field for the central station's output, and these demonstrations impress the public and prepare the way for possible further uses of electric current.

The cut Fig. 3 shows a night photograph taken of a one-thousand-pound truck, which is equipped with a search lamp on the front dash. The projector contains a high candle-power tungsten lamp, and is arranged to focus in any direction. It was designed to facilitate locating and repairing trouble on the overhead lines at night, and the beam of light on the fifty-foot pole shows how well and safely the lineman can attend to his repair work, even on a dark or stormy night. There are many uses to which this truck, with its searchlight, may be put. This wagon is on the streets almost continually, day and night. In the daytime it is used to install services and meters, and at night its battery is removed and a freshly charged one substituted, and the wagon goes on with the night trouble work.

In connection with the sale and introduction of electric trucks, it may be well to point out that mistakes have been made by various enthusiastic but misguided electric truck salesmen, who have endeavored to sell electric trucks for work and at speeds and under conditions that the trucks are not fitted for, and this is a matter that should be carefully followed by every central station endeavoring to build up an electric truck business. The central station companies send out high-grade men to sell blocks of power, and feel justified in paying a good salary to a salesman who can sell a 500 kw. load, with a high load factor, at a low but profitable and satisfactory kilowatt hour rate. They are glad and willing to keep on installing more capacity in their power-plants and distributing lines to take care of these blocks of profitable power, and they should be equally as enthusiastic about having the proper talent to bring in the vehicle business, which seldom requires any investment for additional generating capacity, and always takes current at a fairly high rate per kwh. when the central station is in the best shape possible to supply it and with a maximum profit to their business.

A great many central station men have complained of the high price charged for electric trucks by the vehicle manufacturers, but it must be re-

membered that the vehicle manufacturers have had the burden of a great many years' hard work bringing the trucks up to their present standard of efficiency and dependability, and that the trucks sold to date have not been in proper proportion to the truck builder's outlay. The builders claim that as soon as the central stations awaken and grasp the electric vehicle proposition, as they have embraced the power supply business and the sale of current to other current consuming devices, and when orders for quantities of trucks are received by the vehicle builders, then the price of trucks may be expected to be materially reduced. The electric vehicle builders, in common with the battery makers, are inclined to suggest that the reason for the sale of trucks not going faster is because many of the central station's rates for electric vehicle charging are too high, but this is hardly borne out in practice, and the rates for this business are rapidly reaching a fairly uniform and reasonable basis for service under similar conditions in various localities.

While pushing the campaign for more electric vehicles, the builders will do well to consider the design and supply of a small electric wagon from five hundred to seven hundred and fifty pounds capacity, which would come between a pleasure vehicle and a one-thousand-pound truck, and could be made and furnished to the average central station for a much lower price than the present one-thousand-pound truck. There is an eager demand for a large number of these "small service" wagons that would fill the wants of the average central station for its trouble and repair departments. This type of wagon would be the proper thing for a small central station to start its electric vehicle campaign with, and enable it to practice the use of the electric vehicle and help sell trucks in its territory.

The gasoline vehicle builders have arisen to this need for a small delivery wagon, at a reasonable first cost, and large numbers of these wagons, suitable for the use of the butcher, baker, laundry, grocer, and similar people, are rapidly being introduced, at this time, into the territories supplied with electric current by the central stations. At present, the central stations are entirely helpless to combat the introduction of these small gasoline delivery wagons, as the only electric vehicle now available for the purpose is the one-thousand-pound electric wagon, which has a first cost of sixty-five per cent more than the average gasoline delivery wagon above noted. The electric vehicle builders are aware that a wagon of this sort would be a desirable size to manufacture, and the central stations can get it if sufficient energy is put into the demand for it and a large number of central stations, now passive, awaken to the possibilities and get after this desirable business.

There has been no effort made in this paper to produce figures but to indicate that what a central station should do to obtain an electric vehicle load is to go after it intelligently, vigorously, and with the same study and perseverance that has made success in its other new-business-getting methods. Why not put the same sort of intelligence and energy into a campaign for electric vehicle business?

The New York Electrical Show

New York city enjoyed its fourth annual electrical show from October 10th to 20th in Madison Square Garden. The general scheme of the exposition was the same as in previous years, with a much larger display of electric vehicles and an endless variety of household appliances, for light, heat and power, and a multitude of lamps, motors and other apparatus interesting to both the engineer and the public.

More than 100,000 electric lamps furnished the illumination, exclusive of the various types of arcs and incandescents on show, and the effect at first glance was bewildering in its brilliance and splendor. The prevailing colors were green and white.

One of the many special features of interest was the electric dairy, where

daily demonstrations were given of the modern method of milking cows by electricity. A feature designed to appeal to womankind was the household exhibit, at which washing, ironing and like industries take on the form of play.

The exhibits of the New York Edison Co., the Edison Electric Illuminating Co., of Brooklyn and United Electric Light & Power Co. occupied the entire gallery. The latter company exhibited a series of model show windows which were dressed with the goods of as many leading local merchants.

One of the features of the electrical show was a convention of the Electric Vehicle Association of America, which was held in the concert hall on October 18th. The attendance numbered close on to 250, and a large number of central station men were present, to whom the following papers were of particular interest.

"Problems Involved in Advancing the Use of Electric Automobiles," W. P. Kennedy; "The Responsibilities of the Central Station to the Electric Vehicle Industry," L. A. Ferguson; "The Proper and Practical Care of the Electrical Vehicle Batteries," S. C. Harris; "A Central Station Campaign for Electric Vehicles," F. M. Tait; "The Electric Vehicle in Heavy Trucking Service," J. T. Hutchings; "The Electric Vehicle Battery," Bruce Ford; "A Large Modern Electric Garage," Charles L. Eidlitz.

The popular attendance during the course of the electrical show surpassed all previous records, and the exposition was an unqualified success.

Illuminating Engineering Society Convention

The fourth annual convention of the Illuminating Engineering Society, held at Johns Hopkins University, Baltimore, Md., on October 24 and 25, proved to be one of the most successful in the history of the society. A total of 225 members and guests were registered and attended the sessions of the convention.

The convention is unique in the history of technical society meetings in that a course of lectures on Illuminating Engineering was given during the two weeks immediately following the close of the regular sessions. These lectures were given under the auspices of the Illuminating Engineering Society and of Johns Hopkins University, and covered all phases of the problem of illumination. The physical, physiological, psychological, architectural and commercial sides of illumination were treated, each according to its bearing on the problem, by men of national and international reputation in the several subjects. The success of the course of lectures is attested by the unexpectedly large number who attended. Two hundred and thirty men registered for the course.

The convention was opened on October 24, by Mr. V. R. Lansingh. Mayor Mahool of Baltimore welcomed the society to the city and called the attention of the members to Baltimore's "Great White Way"—Baltimore street. He remarked that since the installation of the improved lighting on this street, agitation had been started from all parts of the city for more light. The city is answering the demand for better street lighting as rapidly as possible.

Among the papers were "Central Station Illuminating Engineering Department Work and Methods Applied by the Denver Gas and Electric Company," by C. F. Oehlmann.

"The Effect of Light on the Movement of Lower Organisms," by Prof. Samuel O. Mast.

"Some Neglected Considerations Pertaining to Street Illumination," by Preston S. Millar.

"The Value of Illuminating Engineering to the Commercial Man," by W. J. Serrill.

"Practical Value of Illuminating Engineering to the Central Station," by J. F. Gilchrist.

"The Value of Illuminating Engineering to the Manufacturer," by V. R. Lansingh.

One of the features of the convention was a lecture by Mr. Van Renssalaer Lansingh on "Illuminating Engineering." This was a popular talk for the benefit of the people of Baltimore, and was followed by an exhibition in the physical laboratory.

The schedule of course of lectures at Johns Hopkins University follows:

I. The Physical Basis of the Production of Light. *Three lectures.* Joseph S. Ames, Ph. D., Professor of Physics, Johns Hopkins University.

II. The Physical Characteristics of Luminous Sources. *Two lectures.* Edward P. Hyde, Ph. D., President, Illuminating Engineering Society; Director of Physical Laboratory, National Electric Lamp Association.

III. The Chemistry of Luminous Sources. *One lecture.* Willis R. Whitney, Ph.D., Director of Research Laboratory, General Electric Co.

IV. Electric Illuminants. *Two lectures.* Charles P. Steinmetz, Ph.D., Consulting Engineer, General Electric Co.; Professor of Electrical Engineering, Union University.

V. Gas and Oil Illuminants. *Two lectures.* (1) M. C. Whitaker, B.S., M.S., Professor of Industrial Chemistry, Columbia University. (2) Alexander C. Humphreys, M.E., Hon. Sc.D., President of Stevens Institute of Technology.

VI. The Generation and Distribution of Electricity with Special Reference to Lighting. *Two lectures.* John B. Whitehead, Ph.D., Professor of Applied Electricity, The Johns Hopkins University.

VII. The Manufacture and Distribution of Gas, with Special Reference to Lighting. *Two lectures.* (1) [Lecturer to be announced.] (2) Mr. Walter R. Addicks, Vice-President of Consolidated Gas Co., New York.

VIII. Photometric Units and Standards. *One lecture.* Edward B. Rosa, Ph.D., Physicist, National Bureau of Standards.

IX. The Measurement of Light. *Two lectures.* Clayton H. Sharp, Ph.D., Test Officer, Electrical Testing Laboratory, New York City.

X. The Architectural Aspects of Illuminating Engineering. *Two lectures.* Walter Cook, A.M., Vice-President, American Institute of Architects; Past President, Society of Beaux Arts Architects.

XI. The Decorative Aspects of Illuminating Engineering. *One lecture.* Mr. Louis C. Tiffany, President of the Tiffany Studios, N. Y.

XII. The Physiological Aspects of Illuminating Engineering. *Two lectures.* P. W. Cobb, B.S., M.D., Physiologist of the Physical Laboratory of the National Electric Lamp Asso.

XIII. The Psychological Aspects of Illuminating Engineering. *One lecture.* John B. Watson, Ph.D., Professor of Experimental Psychology, Johns Hopkins University.

XIV. The Principles and Design of Interior Illumination. *Six lectures.* (1) L. B. Marks, B.S., M.M.E., Consulting Engineer, New York City; Past President, Illuminating Engineering Society. (2) Mr. Norman Macbeth, Illuminating Engineer, The Welsbach Co.

XV. The Principles and Design of Exterior Illumination. *Three lectures.* (1) Louis Bell, Ph.D., Consulting Engineer, Boston, Mass.; (2) E. N. Wrightington, A.B., Boston Consolidated Gas Co.

XVI. Shades, Reflectors, and Diffusing Media. *One lecture.* Van Rensselaer Lansingh, B.S., General Manager of Holophane Co.

XVII. Lighting Fixtures. *One lecture.* Mr. Edward F. Caldwell, Senior Member of Firm and Designer, Edward F. Caldwell & Co., N.Y.

XVIII. The Commerical Aspects of Electric Lighting. *One lecture.* John W. Lieb, Jr., M. E., Third Vice-President, New York Edison Co.

XIX. The Commercial Aspects of Gas Lighting. *One lecture.* Walton Clarke, M.E., President of The Franklin Institute, Philadelphia; Third Vice-President, United Gas Improvement Co., Philadelphia.

Denver Electrical Show

Denver held its first annual electrical show the week of October 10 to 15. The opening ceremonies were most spectacular and interesting, and aroused much enthusiasm. Four tons of red fire were lighted simultaneously on the streets surrounding the Auditorium where the show was held and on the roofs of high buildings in the center of the city, cannons were fired, bombs exploded, and all the factory and locomotive steam whistles in the city shrieked. Some 25,000 additional incandescent lamps had been installed in the streets in addition to the special illumination about the Auditorium. Throngs of people were brought in to the city by special trains, some from as far as Salt Lake City.

The interior of the Auditorium was lighted by 10,000 incandescent lamps and the special feature was a sunrise effect showing a Rocky Mountain scene with a waterfall. This was shown with the rest of the room darkened. Another feature of the celebration was the lighting up of the new office building of the Denver Gas & Electric Co. on which there are 12,000 lamps used in an elaborate decorative design. The company's exhibit in the show was in the form of a complete electrical home, equipped with all electrical conveniences.

The Influence of a Central Station

Faribault, Minn. offers an interesting example of the good influence which a progressive central station may exert on an apparently unprogressive community. Up to last January there were two lighting companies in the town, the Faribault Gas & Electric Company and the Polar Star Electric Company, and with a population of only 10,000 there was obviously not sufficient market for current to enable either central station to prosper.

Tungsten Street Lighting in Faribault, Minn.

About this time, H. M. Byllesby & Company of Chicago acquired both properties and merged them under the name of Consumers' Power Company. Mr. John F. McGuire, now head of the local New Business Department, gives the following interesting description of what followed:

"That was the making of Faribault," he says, "for here was a city 50 years old and still without one single paved street. Naturally all these streets were poorly lighted and the town would have probably continued in this rut for years to come, if the new central station organization had not brought in some of the modern spirit of progress. But Faribault today has the best lighted streets of any city of its size in the state, and all the business streets are paved with brick. For this new spirit has taken hold of every one, the merchants have increased their lighting, everything has begun to brighten and there is as much difference between the atmosphere of now and a year ago as between night and day. All the surrounding towns are looking to Faribault as an example and have begun to make improvements in the same way.

"The company now has without doubt as fine an office as can be found in any city of like size and the people are proud of it. Our future plans are simply never to let up, to gain the good will and friendship of everyone and to hold it by giving the best of service and attention to everything which will "Help Faribault Deliver the Goods." We have over 600 irons now in actual use and are putting out more every day. We have equipped all the old signs with Mazda lamps and have sold a number of new ones. Our power load totals 400 hp. connected, which we think is good, since Faribault is distinctly a residence town."

The Business Ethics of the Charity Bazaar

Why They Should be Discouraged by Serious-Minded Central Station Commercial Men.

By W. E. Bayard

The way to run a charity bazaar is as follows: Have all the ladies of the church spend several months in making useless gimcracks; engage a florist and a caterer to decorate and serve refreshments in the parish house; rope in all the folk with money and sell them the gewgaws; then take up a collection to pay the deficit. After an expenditure of untold effort and many dollars of real coin, the net result is generally a little less than nothing.

This method of doing business is not restricted, however, to church fairs; it is one too generally practiced also by central stations. The management spends weeks in futile planning and pseudo-preparation; a "campaign" of giving away something for nothing is instituted; a lot of undesirable bargain-hunters are attracted; and then the management depletes the company reserve to cover the deficit. On paper the "campaign" is sometimes a success; that is to say, the new business signed up is theoretically profitable. But dispassionate analysis, if such were ever made, would too often reveal that the business secured upon the basis of something-for-nothing is unstable or undesirable, or both.

I do not mean to say that all central station new business propaganda is based upon this quicksand foundation. Plenty of men with sound business training have set their faces against it and are pursuing the straight if at times narrow path of common sense. But the idea that the word "free" is the only trade magnet that will draw in the dollars is still too prevalent. The expounders of this theory claim to be entirely indifferent to the profits which might be made from appliances. They insist that they are in the business of making and selling current, that the sale of appliances for profit is unnecessary if not undesirable; and they state, with good show of reason, that any scheme which will serve to increase the connected load is its own justification.

Now, let us look at the figures and analyze the difference between "free" offers and a conservative plan of doing business for profit.

A central station in the middle west decided to embark upon a campaign for small commercial lighting. The management at first was inclined to sell fixtures at cost and give "free" wiring, but upon sound advice finally decided to restrict its generosity to offering a time-payment plan. This inducement simply opened the offer to that large number of small merchants who operate on little capital and who cannot afford to make any considerable cash investment, though amply able to meet moderate monthly payments. The price established for the fixtures sold gave a margin of 33 1-3 per cent net, or about what any contractor, fixture house or department store would have to make to carry on a profitable business.

The campaign was devoid of what our English cousins term "bounce." There was no exaggeration or red fire. Simple, forceful printed matter was employed sparingly and the main reliance was placed upon the time-payment plan and the persuasion of earnest solicitors. The proposition, in short, was carried forward in a sane, conservative, business way and the results were measured in dollars and cents rather than in bluster and brag.

What were these results? To summarize briefly, in seven months, 785 contracts were signed amounting to 374 kilowatts connected load. There were 358 cash sales of fixtures and wiring and 427 time-payment contracts, amounting to $17,964.23 in all.

The solicitors' salaries came to $3675. the advertising to $500 in round numbers, and $2500 was paid to the commercial engineer who planned and superintended the campaign. The cost of the fixtures was $7400 to which must be added $3000 paid to local contractors for installing and wiring. Let us foot this up and see what we get:

Gross receipts		$17,964.23
Solicitors' hire	$ 3,675.00	
Advertising	500.00	
Fee to commercial engineer	2,500.00	
Cost of fixtures	7,400.00	
Cost of installation	3,000.00	17,075.00
Net profit		889.23

Now, before we go into these figures any deeper, let us figure what would have been the result had the fixtures and wiring been supplied at cost. The expenses would have been the same, naturally, and it is doubtful whether any larger results would have been secured. Figuring the same results, the income would have been the cost of the fixtures plus the cost of wiring as shown in the above table, or $10,400 which would have left a deficit of $7075 on the campaign. This amount, $7075, is the price the central station would have paid to secure 785 new residential connections, or practically $9 per connection, or about $19 per kilowatt connected. Under average conditions, this sum represents net profit on at least the first year's service.

The argument which the advocate of the something-for-nothing policy will immediately advance is that if the fixtures or wiring had been sold at cost, the number of customers secured might have been double or triple, and the cost per connection therefore greatly reduced while the load was increased. Perhaps; but an examination of the records leads one to believe that this proposition was about as successful as the average "free" offer. During the campaign, the company kept seven solicitors on the pay roll, these solicitors attending to the regular work of the commercial department as well as the special work entailed by the campaign. Power and residential lighting was not neglected, nor was any regular work allowed to go to seed. Therefore, the solicitors specializing on this proposition secured two contracts every three days. Can you recall, off-hand, any "free" campaign where better results have been secured?

The more deeply we go into the figures, the more interesting and convincing they become. For example, the introduction of the Mazda fixtures resulted in the deplacement of 361 gas burners, 395 gas arcs and 17 *coal oil lamp equipments*. Only 37 electric arcs and 336 carbon incandescents were disturbed by the campaign—a result traceable to the fact that the new fixtures were sold at a fair price instead of being given away. Any man will freshen up his installation if it costs him next to nothing; few will do so if the change means a substantial investment. Another point: not one single contract out of the entire 785 was cancelled. This was because the proposition was drawn up in a clean-cut, honest fashion, with no frills, extravagant statements, or exaggeration. Trouble with dissatisfied customers comes only when the proposition is misrepresented actually or by inference.

An interesting feature of the campaign is the figures showing the proportion of cash sales to time-payments. Many central stations hesitate to embark upon plans of this sort because of the large investment involved, and this is natural where the central station carries the whole load. However, if the proposition is fairly drawn so that a good discount is offered to the man who pays cash, as in this case, the central station's investment is often insignificant. Our figures here show 358 cash sales against 427 time-payment contracts, or about 54 per cent time-payments and 46 per cent cash sales. Since cash sales carry a profit, this helps reduce the investment.

There are at least three morals to be drawn from this analysis:

Moral No. 1. If a central station Commercial Department is conducted along business lines, it can be made self-supporting.

Moral No. 2. The sale of appliances and fixtures at a profit wins the support of the local contractors and dealers who *must* get a profit and who naturally feel that their business is being ruined by the something-for-nothing policy often employed.

Moral No. 3. While it is easy to *say* that the something-for-nothing plan of doing business gets results, it is equally easy to *prove* that we can sell appliances and fixtures at a fair profit.

The business ethics of the charity bazaar are not more successful than the good, old-fashioned methods of John Wanamaker, Montgomery Ward or the House of Kuppenheim. The slogan of successful business is "perfect service at a fair price," and the something-for-nothing bait is only used now-a-days by the dealer in shoddy.

A Georgia Section of the N. E. L. A.

A Georgia section of the N. E. L. A. was organized on October 20, at a meeting held at the office of the Georgia Railway & Light Co. in Atlanta. This section is largely the result of the efforts of Mr. John S. Bleeker of Columbus and Mr. William Rawson Collier of Atlanta, and has an initial enrollment of 11 Class A and 25 Class B members. The following officers were elected: Pres., John S. Bleeker, Columbus; Vice-Pres., W. R. Collier, Atlanta; Ex. Com., J. J. Cagney, Macon, R. P. Mayo, Augusta, Burdett Loomis, Jr., Waycross; Sec-Treas., H. M. Corse, Columbus.

The National Electric Light Association was represented throughout the convention by Mr. T. C. Martin, Secretary, who supplied data as to the constitution, methods, and practice of the other sections already affiliated.

DOLLAR IDEAS

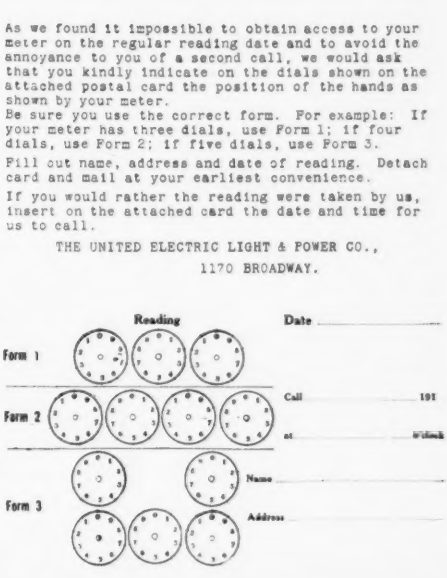
Reading Meters by Postal

JOSEPH F. BECKER, Jr.

General Sales Agent, United Power and Lighting Co., New York City

The accompanying cut shows the two interesting sides of a return post card which is used by the United Electric Light & Power Company. When the meter reader calls and finds the house closed up, one of these cards is mailed out to be filled in by the consumer.

This scheme is particulary convenient during the summer months when people are running off for short vacation trips, but is useful here and there the year around. There is not the slightest danger of loss through false reports, for the meter reader will get the true figures next month in any event, and it will equalize. But the fact that the company is willing to allow the customer to report his own consumption, makes a very strong impression and is worth much in the feeling of confidence which it creates.



As we found it impossible to obtain access to your meter on the regular reading date and to avoid the annoyance to you of a second call, we would ask that you kindly indicate on the dials shown on the attached postal card the position of the hands as shown by your meter.

Be sure you use the correct form. For example: If your meter has three dials, use Form 1; if four dials, use Form 2; if five dials, use Form 3.

Fill out name, address and date of reading. Detach card and mail at your earliest convenience.

If you would rather the reading were taken by us, insert on the attached card the date and time for us to call.

THE UNITED ELECTRIC LIGHT & POWER CO.,
1170 BROADWAY.

Reading

Date

Form 1

Form 2

Call 191

at

Form 3

Name

Address

SELLING ELECTRICITY

NOVEMBER, 1910

CHRISTMAS GIFTS

The electrical Christmas gift is not a new idea, but this is the first year that it seems to be getting its share of preparatory attention. Heretofore, central stations have waited until December 24th before admitting to the public that an electrically heated chafing dish or a traveler's flatiron might make an acceptable holiday token. This year there seems to be a fair chance of letting the public in on a good thing in advance.

As a matter of fact, most—or many—of the electrical household and personal appliances are rather costly. Six dollars is a lot to pay for a flatiron when ordinarily one can buy the old-style cast-iron kind for fifty cents. Sixty dollars looks big for a vacuum cleaner when a good, serviceable sweeper of the kind commonly used by our mothers costs but three-fifty. Of course we are selling the electric appliances—selling plenty of them—but the fact remains that they are, in the manner of speaking, real luxuries. However, Christmas is a luxurious season. We give as gifts things that our friends and family hesitate to buy for themselves. Hence, the opportunity for electrical Christmas gifts.

But to make an electrical Christmas, the central station man must start well in advance. He must follow the lead of the successful merchant. He must display his goods and advertise them. The central station that applies merchandizing methods here will win.

POINT OF VIEW

The ability to conceive broadly, to see with untroubled vision the correlative parts of one's business is true perspective—that is the fundamental of constructive commercialism. The man who is chained to a desk by detail, who is harried by minutae, who has no mental leisure to look ahead because blinded by the unfinished work of yesterday, such a man is foredoomed to no better than a half-portion of success. Shortsightedness is largely a habit. Lack of perspective is generally a self-inflicted curse. It pursues and masters us only because we fail to realize its domination or are too lazy or indifferent to resist. All of which is inspired by a little incident recited by one of our leading central station commercial managers.

Some years ago, this man was a power solicitor in a large city and went about his work as the other solicitors did, with shortsighted attention to the job in hand and no broad perspective on his work as a whole. He spent his days peeking into cellar windows to discover small gas engines and in snooping about alleyways in localities where small manufacturing was known to abound. Being a good solicitor, he "got his share of the business"—in other words, he was about as successful as the run of solicitors who followed the same obvious methods and who worked equally long hours. But he was not satisfied.

One day he went to the tallest building in his territory and looked about him; as he said, he "wanted to get a

bird's-eye view of the ground" he was working. From a fourteenth-story window he noted the many buildings from which exhaust steam arose, indicating the localities of steam plants. But best of all, the solicitor was able to get a *perspective* on his territory—able to view it broadly as an entity, instead of piecemeal as a conglomeration of forbidding prospects.

The result of this inspection was almost magical. From a shortsighted solicitor, this young man developed into a broad-gauge, creative business man. Instead of puttering about in search of small and frequently unprofitable gas engine installations, he learned to plan wisely to secure the business of large power users who had previously depended upon private steam plants.

The lesson is worth taking to heart. The most cutting and the truest criticism that has been made regarding central station commercialism is that it is shortsighted. Everywhere we find departments engaged in specialized effort which, when successful, is but moderately profitable. We find sales effort directed toward decorative street lighting which gives but ten watts a running foot and which displaces or ruins sign and window lighting that gives double or quadruple that consumption. We find so-called successful sign campaigns that but add to the already mast-like station peak without extending the hours of use sufficiently to warrant the investment in plant. We find thousands of appliances sold at heavy loss that fail to give the promised revenue to balance this loss.

The big man—the truly successful man—is he who sees his work in its proper perspective and who has the courage to truly appraise it in its exact relation with the work of others.

The picture of the young solicitor who quit delving into cellars after insignificant gas engines and who clambered to the roof-top in search of big steam plants, is one that teaches a needed lesson in perspective and clarity of vision.

YOURSELF AS A PUBLIC SERVANT

Mr. Arthur S. Huey, Vice-President in charge of operation for H. M. Byllesby & Co., of Chicago, recently mailed to every employee of all the properties operated by the Byllesby Company, a small printed circular entitled, "Yourself As a Public Servant." It reads as follows:

"As members of the Byllesby organization you are public servants in the true meaning of the term. It is particularly important that every officer, every head of department and every employe of whatever capacity, should realize this fact and regulate his conduct accordingly. Each one of us owes his employment to the public. In all municipalities where we manage electric, gas and street railway utilities, the people have selected our organization to perform essential service, or have consented to such an arrangement. The operation of a public utility is in the most positive sense a public trust.

"Under these circumstances, you must realize that you can do your full duty to your employer only by doing your full duty to the people of the municipality where you are occupied. The employee who serves our company best, is the employee who serves the public best. This applies in all departments of the operating organization—equally to the managers the stokers at the gas works, the trainmen on their cars, the engineers at the power houses, the men in the offices, and to those engaged in construction and other outside duties.

"To a great extent our organiza-

tion is judged by the *manners* of its employees. Therefore, you must cultivate genuine courtesy and exercise patience and forbearance on all occasions. Those details of the service which the public have a right to know, while perfectly familiar to yourself, are often not understood by the men and women with whom you come in contact. Part of your duty is to reply to inquiries for information politely and comprehensively. If you are unable to supply the information yourself, the inquirer should be personally conducted (whenever possible) to the person in authority who can.

"You are never too busy to furnish the public with proper information, nor to be courteous in manner as well as in words. In using the telephone it is especially easy to be gruff and abrupt and to turn friends into enemies. Courtesy and decent treatment are due fully as much to those of small financial means as to the largest prospective patron. The possession of a habit of cheerful courtesy, springing from an honest desire to please, is an invaluable asset to the person who would advance himself in popularity and material welfare. It is worth more than capital and at times takes precedence of ability. But all of your good manners and willingness to make agreeable the points of contact between company and patron are of little consequence unless they originate in a deep-seated consciousness of your obligations in the public service.

"The men in the mechanical and in some of the other departments, seldom or never meet the public in an official way. Their work lies in helping to back up our reputation with satisfactory *actual performance*. The standard of the service should be guarded as scrupulously as the standard of the food supplied on your table. Interruptions to the service should be made a matter akin to the honor of every man upon whom the service depends. In all departments, promises to patrons and public should be carefully considered before they are made, in the light of the fact that disappointment and dissatisfaction go hand in hand.

"It is my personal belief that there does not exist a body of employees more loyal, enthusiastic and efficient than the one which maintains our ideas of progressive public utility management. Perfection, however, is approximate at best, and in our endeavors, with so many customers to please, there is always opportunity for earnest effort toward new achievements. At this time, as you value our esteem, I ask you to give careful thought to the contents of this circular."

In these days of dependable physical service, probably the greatest source of irritation between central station and consumer is the thoughtless, discourteous employee. It is a lamentable but nevertheless a ubiquitous characteristic of the human, which decry as we may, must be constantly fought and bled for. No company can employ gentlemen born and trained in all branches of the organization, for the simple but conclusive reasons that under present social conditions you can't select men to heave coal, present bills and man the "cut-out wagon" on a qualification of gentility. Therefore, the public will always be exposed to representatives of the electric light company who are lacking in diplomacy and polish, and — more the pity—no less in the office than out.

So the best we can do is to work unceasingly for the creation of a proper "atmosphere" which will permeate the whole establishment. We must effect in the office a mental attitude which will represent all the courtesy and attention that the most punctilious customer could expect or desire, and which will spread its influence through every branch of the business.

Mr. Huey's little talk has just the personal touch that makes it a direct appeal to every man in the industry.

NEXT MONTH

ELECTRICAL PROGRESS

Christmas Gift Number

November 1910

HOW CAN YOU INTEREST THE CHRISTMAS SHOPPER —UNLESS YOU DO?

WINDOW DISPLAYS, pasters on bills and manufacturers' booklets are not enough. People don't realize that electric household appliances are the most welcome, practical and satisfying Christmas Gifts obtainable and THE EASIEST TO BUY. You must educate them.

The Electrical Progress Supplement next month will focus the attention of the Christmas shopper!

Turn the page.

Published by

THE RAE COMPANY

74 Cortlandt St., New York

The Electrical Progress Supplement

IS A NEW IDEA and a new opportunity

for the central station — apparently a little independent magazine, each number concentrated on one specific class of central station service. It is written simply but forcefully in popular vein, and to leave an indelible impression on the prospect, both connected and hoped for. It has the advantage of being received by the consumer without prejudice. It takes up one subject at a time and from all sides.

In August, 24,910 reprints of the Electric Vehicle number were distributed by 53 central stations—large and small—among their vehicle prospects.

This month to cover *advance orders*, 10,000 advance reprints of the Residence Lighting Number are being run off. Another lot will be printed as soon as we know how many you will need.

Next month, there will be another Electrical Progress Supplement — a Christmas Gift Number — in time to reach every Christmas shopper in your city before the list is made up—in time to develop an appreciation of the value of electric household appliances as useful Christmas Gifts. There will be short articles on the usefulness of the various domestic appliances — heating devices, vacuum cleaners, washing machines and the rest — an article suggesting new uses for the Christmas tree outfit in holiday decoration, an article on the selecting of gifts and other items, with plenty of cuts, all designed to sell more current.

The Christmas market can be made extremely profitable to the central station, both in holiday sales and in subsequent day load. Here is a chance to do some inexpensive educational advertising which will bring immediate returns.

Reprints of The Residence Lighting Number are ready now.

Reprints of The Christmas Gift Number will be ready November 10th.

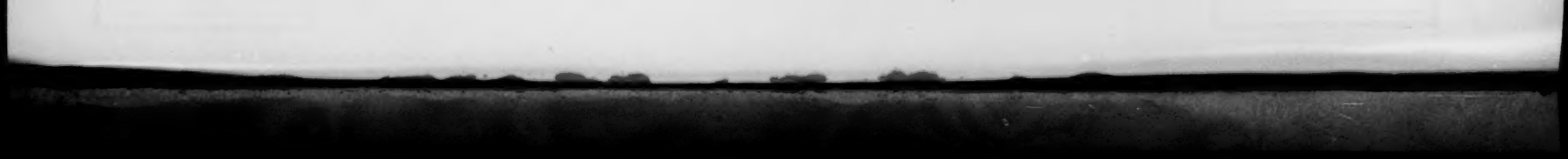
They will cost you $5.00 for 100, $10.00 for 250, $15.00 for 500, $25.00 for 1,000.

How many can you use?

SELLING ELECTRICITY

THE RAE COMPANY, PUBLISHERS

74 Cortlandt Street, New York



ELECTRICAL PROGRESS

Supplement to "SELLING ELECTRICITY"

Christmas Gift Number

November, 1910

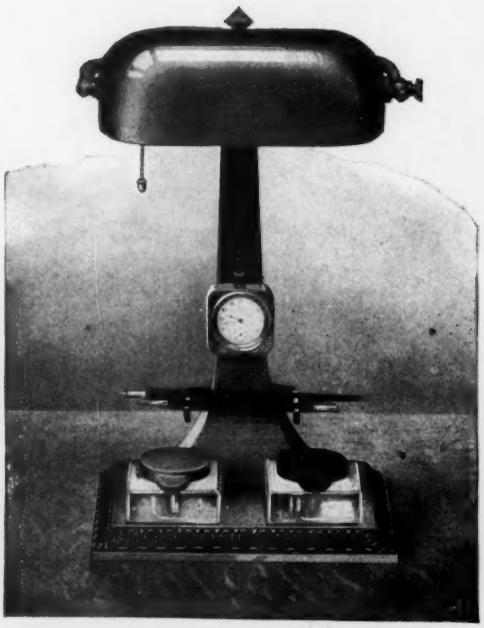
Published by

THE RAE COMPANY

74 Cortlandt St., New York

EMERALITE

THE
NEW DESK LIGHT IDEA



4378 E W

KIND TO THE EYES

Send for interesting booklet

H. G. McFADDIN & CO.

48 WARREN STREET :: :: NEW YORK

Electrical Progress

The Christmas List

. Why Shouldn't the Gifts be Useful and Mean Something

By Frederick Benjamin

About every other Christmas present is foolish. And it is foolish for the simple reason that it is bought in a rush, without any deep consideration for the needs and desires of the relative or friend whose name is to be checked off the list.

There is a genuine comfort in hot toast ready on the breakfast table. The Electric Toaster makes an inexpensive gift

The process is ever the same. You watch the approach of Christmas in a helpless, hopeless sort of way, because the great annual *Spenderfest* is hanging over your head; and all "Buy Early" editorials to the contrary, the last week finds the bulk of the work still to be done. Then it becomes largely a question of "What will do for Marjory? What will do for John?" and the natural desire to select for each one something intimate that will be used and enjoyed is put to route by the necessity for haste and the jostling of the crowds.

Why shouldn't Christmas gifts be useful? After all, the useful ones are the easiest to buy, because they are just the things we use in our own daily life, and those other little added comforts and luxuries that we want and plan to buy "one of these days."

"Little comforts and luxuries"—that means one thing—the home—your home and my home, the place where we spend our best hours. Did you ever stop to think how many of these little comforts that you look forward to are begotten by electricity?

The young woman delights in the electric tea kettle, the chafing dish and

The Electric Chafing Dish is always ready—No lamp to fill. A welcome gift in any home

the toaster for her table, and so does her mother. There are times when the heating pad, the vibrator and the hot water cup are golden luxuries.

Just so, give a man an electric shaving mug to use every morning and a cigar lighter on his desk, or a real honest reading lamp and he enjoys

Few people have as many Electroliers as they would like. There is infinite variety in design and price

them thoroughly and continuously. For that is the secret of a successful gift—something to use, something that brings a satisfying service.

Doesn't it seem then, that we have kept too close to the standard of our childhood—when a Christmas present was a toy, a plaything to be treasured

An Electric Christmas Box. The first essentials—an Iron and a Toaster

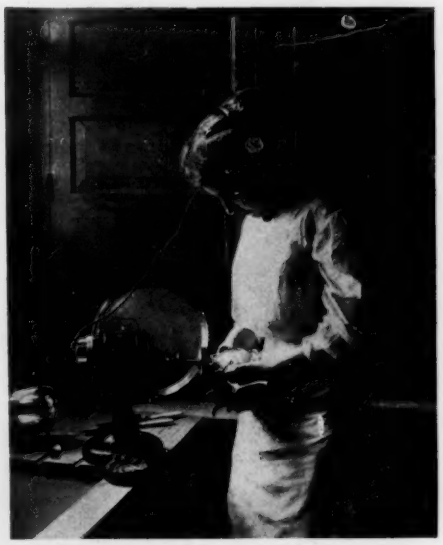
only till we found that we really didn't need it?

After all, what grown-ups value must have some use, some place in the day-by-day life, and we enjoy that which we find brings pleasure and comfort today and tomorrow until it is really a part of our scheme of things.

Practical Giving

Let the Christmas Present Have a Real Objective —Make It Something That Will Do Good

When a girl and a man are married, among the wedding gifts are usually enough impractical and unnecessary things to last them the rest of their lives. Nobody wants to throw away these brass or glass or silver trinkets because of the association, but just the same everything you own brings its responsibilities—you have to pack it up when you move, you have to dust it, you have to take care of it. Why should any more of these things-we-



The General Utility Motor—the Electric Servant. It cleans the silver and brasses, and can be made to freeze cream, beat eggs, grind meat and do other chores

can't-use be thrust on us at Christmas time?

When you begin to lay your plans for the Christmas shopping this year, just make a separate list of those who are married. Their greatest interest is in their home. What can you give them that they can live with? Is there any reason why a Christmas present should not be something that will lighten labor and hasten the work of the day?

If the cost of the gift is to be limited to a few dollars have you thought of an electric iron? Winter and summer it saves steps, it saves waiting, it saves

the bother with the hot stove. It is always ready, for the dainty lace collar or to put the creases back in trousers.

Have you thought of a baby's milk

The Baby's Milk Warmer. You simply turn on the current. Nothing to hunt for, nothing to spill. Where there is a baby this present will be appreciated

warmer? The mother and father will call you blessed on many a cold night.

Have you thought of an electric fan? It is a comfort in winter to draw the

What is home without an Electric Iron? Always ready and no standing by the hot stove

warm air into a cool room, though in summer it drives the heat away.

And then comes the infinite variety of electric cooking devices, toasters, broilers, disc stoves, plate warmers, waffle irons and the rest, small in cost but great in comfort and convenience, inexpensive to use, because no one of them is in operation for long at a time.

Then for those that are nearest, there is the vacuum cleaner, the electric hardwood floor polisher, the luminous radiator for emergency heating and the art glass electrolier. True!—for the same money you could buy them a rug or a chair or a picture, but, after all, the things you enjoy as gifts—are they not those that you have wished for sometimes, but hesitated to buy?

Another domestic labor saver—the Sewing Machine Motor. Works from any fixture and does all the work!

When a man denies himself some little home comfort because he thinks that it is after all not essential, and "perhaps the money could be better spent some other way"—isn't that the thing to give him for Christmas? The things

You can have plenty of pop-corn, without scorched hands and face, if you use the electric Corn Popper. And lots of fun for the children

we enjoy the most are the little useful luxuries we are not apt to buy for ourselves.

Ask yourself—How do you feel about it?

Isn't that the answer?

What Electricity Will Do In the Home

A List of the Applications of Electricity Available to Every Home Enjoying Central Station Service

Are you sure you are getting all the comfort, all the enjoyment, all the satisfaction that electricity can bestow? If your house is wired, are you making use of all its possibilities? If not wired, can you afford to deny yourself this automatic servant, and sacrifice the convenience, the safety, and the economy of time, labor and worry that it offers?

Perhaps you don't realize just what the various domestic applications of electricity represent today. Mighty few of us do. Here is a list arranged according to the place where each device should be available. No one house, of course, would ever require such an extensive equipment, as appliances can be moved about as desired and some heating types used for many purposes. The list merely enumerates the variety of apparatus available for use in the home, and suggests some of the most practical and welcome Christmas Gifts that can be found.

An electric outfit for the breakfast table—Percolator, Chafing Dish, and Disc Stove

Porches

Ceiling porch light.

Base-board or floor receptacle for connecting portable lamp, fan, or where meals are served in summer, any heating appliance. (See dining room.)

Lower Hall

Ceiling or side wall lights or both.

Side wall switches controlling porch light; also upper and lower hall lights. (3-way.)

Base-board receptacle to connect electrolier on table, fan, emergency radiator or Christmas tree lighting during holidays, vacuum cleaner, or hardwood floor polisher.

Reception Room

Ceiling or side wall lights, or both.

Side wall switch to control chandelier.

Base-board receptacle to connect portable lamp, fan, emergency radiator, vacuum cleaner or hardwood floor polisher.

Living Room

Ceiling or side wall lights, or both.

Side wall switch to control chandelier.

Base-board receptacle to connect portable lamp, fan, emergency radiator, cigar lighter vacuum cleaner or hardwood floor polisher.

Dining Room

Central ceiling fixture (dome or cluster of pendants) or side wall lights, or both.

Side wall switch controlling ceiling lights.

Base-board receptacles near side-board and near serving table. Also floor receptacle beneath the dining room table for connecting fan or heating appliances or decorative lighting outfit for table. The appliances available for use in dining room are: Chafing dish, coffee percolator, tea kettle, disc stove, toaster, hot water cup, broiler, water boiler, waffle iron, plate warmer, warming dish, emergency radiator, fan, vacuum cleaner or hardwood floor polisher.

Pantry

Central ceiling or side wall lights.

Side wall switch to control ceiling light.

Base-board receptacle to connect plate warmer, toaster, hot plate, water urn, coffee percolator, tea pot, small motor for polishing silver,

Kitchen

Central ceiling lights and side wall lights near sink and table.

Side wall switch to control ceiling lights.

Base-board receptacles to connect complete electric stove, water heater attached to boiler, water urn, flatiron, fan, individual waffle iron, cereal cooker, vegetable boiler, broiler, chafing dish, coffee percolator, tea pot, toaster, plate warmer, baking dish, water filter, and kitchen

Electric equipment for the bathroom. Hot Water Cup, Massage Vibrator and Luminous Radiator

motor for beating eggs, freezing cream, grinding coffee, meat or potatoes, or polishing silver.

Laundry

Ceiling or side wall lights, or both.

Side wall switch to control ceiling light.

Base-board receptacles to connect flatirons, washing machine, water urn or fan.

Cellar

Convenient lights by furnace, in storeroom, etc.

Side wall switch at head of stairs, controlling all cellar lights.

Upper Hall

Side wall lights.

Side wall switch (3-way) to control lower hall lights.

Base-board receptacles to connect fan, vacuum cleaner or hardwood floor polisher.

Bedrooms and Nursery

Ceiling or side wall lights, or both.

Side wall switch to control ceiling lights.

Base-board receptacles to connect fan, heating pad, curling iron, foot warmer, hot water cup, emergency radiator, warm rug, small pressing iron, sewing machine motor, baby's milk warmer, vacuum cleaner, or hardwood floor polisher.

Turn-down lamps.

Bathroom

Side wall lights.

Base-board receptacles to connect hot water urn, sterilizer, massage vibrator, hair dryer, curling iron, hot water cup, shaving mirror light, fan, vacuum cleaner, or hardwood floor polisher.

Turn-down lamps.

Safe Christmas Decorations

What Electricity will do in Decorating for the Holidays

A good many years ago a fire was started in some unknown way and the newspaper reporter who was detailed to secure the "story" said that it was "caused by crossed electric light wires." Since then every fire of unknown origin is attributed to electricity, in spite of the fact that it can be easily proven that electric wires cannot possibly start a fire except under very unusual conditions.

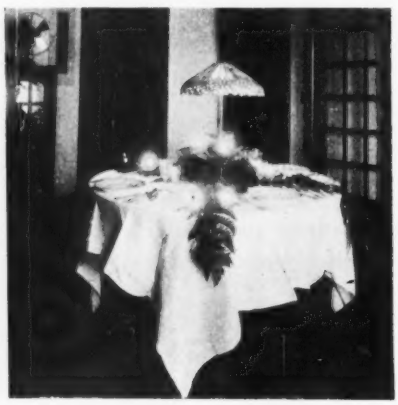
Those of you who have believed this story about the fire hazard of electricity will be surprised when we say that the safest Christmas decorations in the world are electrical. And not only are they the safest, but it is generally conceded that they are the most beautiful.

The picture on our front cover is a characteristic example of the electrical decorator's art. The festoons of many colored lamps can be draped in any way and intertwined with ribbons, holly and evergreen without the slightest possibility of danger and with the most artistic and beautiful results.

The pictures here shown give other

An Electric Floral Decoration—Six illuminated chrysanthemums. A beautiful holiday gift

effects less elaborate but none the less attractive. The small decorative lighting outfit consisting of 8, 16 or 32 miniature lamps may be used not only on the Christmas tree and for festoon purposes, but may be intertwined with dinner table decorations or in the window wreaths and give most novel and "Christmasy" effects at almost no cost. Baskets of artificial flowers are procurable to serve as centre pieces in such decorations, and where the



Using the Christmas tree lights for table decoration Another pretty holiday effect

decorations are for the children the lamps can be procured in the shape of birds, fruits and flowers so cunningly made as to appear almost lifelike.

The best thing that can be said for electric decorative lighting outfits is that they are absolutely safe and much more beautiful than any other scheme of decoration. There is no grease, no flame, no danger of fire; and they have a brilliance and sparkle entirely their own.

An Electric Christmas for Father

It is not true that electrical Christmas gifts must be restricted to a chafing dish for mother and a dainty traveler's iron for Sister Sue. There are a few things electric on the list for father also. For example, a reading lamp.

The Shaving Mirror. It throws the light where you want it, and appeals to every man

There are electric lamps for the library that give practically perfect light for reading—soft, well-diffused and colorless. These lamps can be turned up or down at will and because of their peculiar internal design, they shed a soft, even light over the printed page, a light free from all glare and ideally suited to reading.

Then there is the electric cigar lighter for the smoking room. It is one of those tiny conveniences that the "old

The Electric Reading Lamp is a real comfort. It harmonizes in tone and puts the light where you want it

gentleman" enjoys because it is "different."

The scientifically-designed, electrically-equipped shaving mirror which throws an intense light over the lower

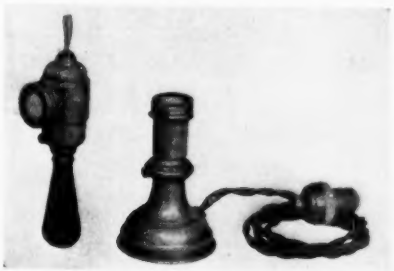
half of the face, is a practical, useful gift, as is also the electrically heated shaving mug which supplies hot water

The Electric Shaving Mug is a real luxury—every day. There is no better Christmas Gift for a man

for the shave at almost a moment's notice.

For elderly men, the electric radiator has taken the place of the good, old base-burner on cold days, and the electric warming pad has replaced the unsatisfactory hot water bottle for night service.

While the selection of electric gifts



Two kinds of Cigar Lighters. There is no present more appropriate for the smoker, for den or office

solely for men is not large, any man will appreciate any of the half-dozen useful gifts available, and more so because they are unique.

The Electrified Dining-Table

An Uncommon Luxury at Little Cost

Those who receive electrical appliances as Christmas presents will be interested in the following description of the way one family "electrified" the dining room table to accommodate

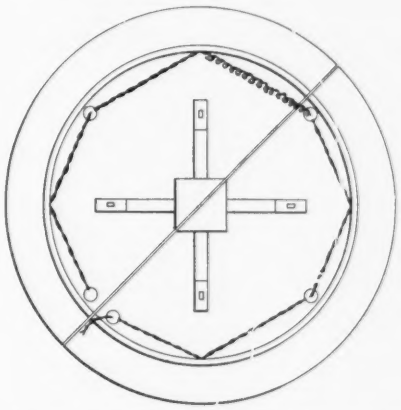


Diagram from underneath the table showing scheme of wiring

the several small heating utensils which have become a part of their daily life.

The electrical equipment of this dining room consists of the lights, a fan, and three practical heating appli-

The Electrified Table set for breakfast, with Toaster and Percolator

How would you like to have this for a Christmas Present?

It is primarily useful.

It is scientifically designed.

You get an even illumination on your reading page without streaks and shadows, because of the Holophane Distributing Globe, as seen below the dome.

It has a dimming switch. It is an electric turn-down lamp.

It is in every sense of the word designed for service.

Yet, it is certainly artistic.

We have several designs.

Be kind to your eyes, and ask for our book on the **G-M Lamp.**

The Electric Motor and Equipment Co.

Newark, New Jersey

ances,—a toaster, a coffee percolator and a chafing dish. When the owner of the house first purchased the appliances, he used them on extension cords which were plugged into the lighting

The Electrified Table at night with Electrolier and Miniature Lamps hidden in the greens

fixtures, but he thought this method could be improved upon so he called in an electrical contractor and at the expense of only a few dollars had the table "electrified." A plug was set in the floor under the table and connected in the cellar with the main feed wires. From the plug, a stout, silk-covered cord of ample capacity leads to the main tap under the "apron" of the table. The table was then wired as shown in the diagram, provision being made so that when the table is enlarged the circuit is not disturbed. Four outlets are provided—sufficient for all probable needs.

The electrical equipment is used at almost every meal. Toast and coffee are made for breakfast; luncheon dishes are frequently prepared in the chafing dish; the after-dinner coffee is always made electrically, and frequently little suppers of oysters, rarebits and lobster are given. For formal

REGINA

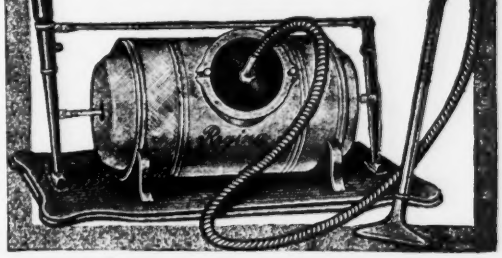
Pneumatic Cleaners

THE NEW REGINA PNEUMATIC CLEANERS

are by far the most perfect, most practical and easiest to operate of all vacuum cleaning machines and are the greatest labor savers ever invented. These up-to-date cleaners have double suction pumps and do the work in half the time and with half the effort used with single suction machines. Made in the Regina factory by skilled workmen and fully guaranteed. Light, neat, compact, powerful. Their cost is so very reasonable that no housekeeper can afford to be without one. Electric and also hand-operated models.

Write us to-day—while you think of it—for full particulars and let us tell you why you need a REGINA and how and where you can obtain one.

THE REGINA COMPANY, Dept A
Cor. Broadway & 17th St., New York
213 Wabash Ave., Chicago



THE WEAK SPOT

in ordinary washing machines is

The Spot that is Washed out on the old Washboard AFTERWARDS

The Saver Electric Washing Machine does the same work as the flat washboard directly under the eye of the operator without any of the old time labor.

There is no weak spot to the Saver because each piece receives the same individual attention as in the old way. It leaves no weak spot on the user because there is no **labor** in either washing or wringing.

THE SAVER

VISIBLE WASHER and WRINGER

Is used on an ordinary Set Tub and takes up no additional Floor Space :: :: ← **SE-IT?**

It is not fastened to the Tub in any way and is ready for use as soon as placed in position ← **SE-IT?**

There is no handling of Water, no adjustment of Clamps and Belts, no soaking or boiling of the Clothes :: :: ← **SE-IT?**

It will wash anything from the coarsest Blankets to the Daintiest Laces with equal Thoroughness, Speed and Safety :: :: ← **SE-IT?**

IT IS WORTH WRITING TO US FOR A DESCRIPTIVE PAMPHLET :: :: :: ← **DO-IT?**

SAVER MANUFACTURING CO.

FIFTH AVENUE BUILDING :: :: :: :: NEW YORK CITY

dinners, a decorative lighting outfit of miniature lamps is used effectively.

In the electrified dining room, there is only a single side wall lighting fixture, as portable lamps are used exclusively. This is because in so small a bungalow the only open fireplace had to be located in the dining room, which made it undesirable to install an ordinary low-hanging dining room fixture or dome which would be in the way when the table is moved from its central position.

These pictures tell a convincing story of comfort and convenience. They bluntly refute the idea, which unfortunately prevails in many quarters, that electrical appliances represent an unwarranted expense. The entire equipment of this electrified dining room cost scarcely fifty dollars, including the appliances and the wiring, while the operation of the devices upon a common-sense basis is less than four cents a day. Certainly, at this price, the electrified dining table is a low-priced luxury.

A great many people seem to think that their house wiring is there just to provide light, with possibly other luxuries in the future. They are losing a great deal of comfort and convenience. A toaster, a chafing dish, a percolator and a fan make small impression on the monthly bill, but they mean a lot to any home. Christmas is a good time to buy them.

Every Man

and boy, no matter what his chosen profession, should make a study of electricity.

¶ The necessity for a practical knowledge of electricity is everywhere acknowledged.

¶ Engineers and mechanics, managers and superintendents are coming to realize the necessity of a practical knowledge of electricity.

¶ Every business has something electrical in it, every home contains something electrical.

¶ Practical men are needed to install, care for and maintain such apparatus.

WE ARE TEACHING

a practical course, a course requiring the co-operation of brains and hands, a course wherein the tools and machinery are brought into action by the student, a course in which there is no guesswork, nothing left to the imagination.

¶ Write or call for prospectus.

NEW YORK ELECTRICAL SCHOOL

24 W. 17th St., New York City

"UNIQUE" POINSETTIA LAMP, No. 4124
Diameter 18 inches Height 21½ inches

"UNIQUE" WISTERIA LAMP, No. 4126
Diameter 18½ inches Height 23 inches

That Xmas List

How many really useful gifts are on it?

Gifts that please and satisfy 365 days in the year—gifts that reflect the true spirit of Christmas? What is more desirable than a *suitable* table lamp—if it is right?

Don't Buy Portables or Ceiling Fixtures

as you would a kitchen table—by feet and inches.

WE ARE PIONEERS in making Art Glass Shades and our large line permits selection for any environment. We make our lamps to harmonize with their surroundings—tell us the character of room and we will submit designs for your approval.

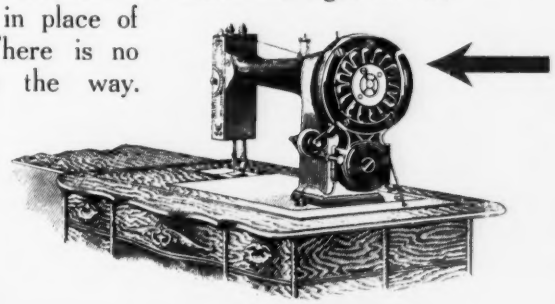
Unique Art Glass and Metal Company

Write to our Factory
105 Vandeveer St.,
BROOKLYN, N. Y.

Call at our Show Rooms
36 W. 28th St.,
NEW YORK CITY

Sew Without Labor

Let a **Bissell Motor** do your sewing for you. Eliminate the treadling, the backache, the drudgery. Sewing becomes a pastime when you have a motor to do all the work while you simply guide the fabric. A **Bissell Motor** is simple. Look at the picture—see how the motor fits right on the head of the machine in place of the hand-wheel? There is no clumsy apparatus in the way. There is nothing to learn. You start, stop and control the speed perfectly—all with a slight pressure of the foot



And the **Bissell Motor** is cheap—fifty cents a week—seven cents a day—less than your husband pays each day for each cigar—this rents and buys it at same time. We have a sensible time-payment plan to offer you—one that your husband or your lawyer will approve. Let us send it—with a little booklet telling all about the wonderful **Bissell Motor**—the little magician that enables you to "Sew Without Labor."

The Bissell Motor Co.

Toledo, Ohio

A Proposition to Central Stations

It is greatly to your interest to demonstrate the Bissell Electric Motor for Sewing Machines, you benefit directly and indirectly, and we have an interesting co-operative proposition which will popularize electricity among your customers.

Shall we send you details now?

Substitute Tiny Electric Lamps for Candles

for decorative lighting at Christmas Time

(Safer, Cleaner and Much More Convenient)

The fact that these little electric bulbs can be used in any position and in any surroundings without fear of fire makes them especially desirable substitutes for candles at all Christmas tree festivities either in church, home or store.

For the Church Christmas Tree

These lamps make possible very beautiful and artistic lighting effects in addition to being safe, clean, convenient, novel, easily installed and inexpensive. They can be used year after year—the initial cost is small and they require *very little* electricity.

For the Home

While especially suitable for Christmas tree lighting, the lamps can be used at any time to create many novel lighting effects for luncheons, parties, receptions and the like.

Convenient Assortments in Separate Packages

The standard Christmas tree lighting outfit is supplied this year *without* the lamps which are purchased separately. For this outfit, regular style I, 14-volt miniature lamps, 6 clear, 2 red, 2 yellow and 2 frosted, are supplied, packed in convenient pasteboard boxes. The small fruit and nut lamps, described above, are furnished 12 in a standard package.

The animal lamps, including the snow man and Santa Claus types, are not put up in standard assortments but are supplied separately.

How and Where to Buy

Get these lamps from your lighting company or electrical supply dealer—any handy man can install them in a few minutes. If you cannot get G-E Lamps locally write us for further particulars, which will be immediately forthcoming, together with an attractive booklet showing the fruit, flower, nut and animal lamps, in their actual colors. Already there is a big demand for these special miniature lamps and the supply is limited, so write at once.

General Electric Miniature Lamps

Reproducing Fruits in True Colors
- Apple
- Blackberry
- Gooseberry
- Lemon
- Mulberry
- Orange
- Pear
- Peach
- Strawberry

Reproducing Nuts and Flowers in Colors
- Acorn
- Pine Cone
- Walnut
- Lily
- Rose
- Thistle

Reproducing Animals in Colors
- Canary
- Clown
- Dog
- Owl
- Santa Claus
- Snow Man

Large Fruits
- Apple
- Orange
- Peach
- Pear

Also 1-candle-power lamps with clear, frosted, red or yellow bulbs.

For the Business Man's Window Display

Cheery, glowing miniature electric lamps add color, life and the much sought after touch of uniqueness that impels the passerby to stop and look. The Christmas tree, hung with toys and a few dozen one-candle-power lamps lighted and in cheery colors is bound to attract much attention and favorable comment.

Flowers and fruit baskets, wreaths, glowing with life, light and warm colors from tiny electric bulbs cunningly concealed in the foliage, are in harmony with the spirit of the season. These set pieces are ready for service the minute you insert the plug into a convenient socket.

Many wide-awake merchants use scores of the tiny one-candle-power lamps in dozens of different ways in their windows at Holiday time, in many cases rearranging daily the location and color of the lamps, thus securing many different novel and artistic effects at a minimum expense.

ADDRESS ALL CORRESPONDENCE TO

GENERAL ELECTRIC COMPANY

Dept. of Miniature Lamp Sales, Harrison, N. J.

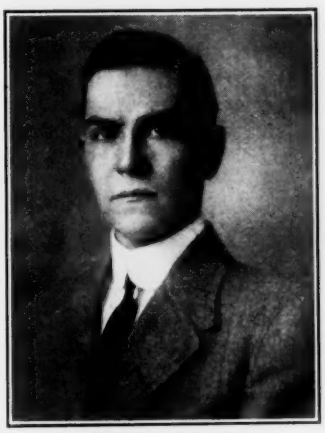
2839

The Two Laws of Salesmanship

By Harry N. McConnell, Commercial Manager,
Susquehanna Railway & Light Co., New York City

"Be Tactful" and "Be Persistent"—on these two commandments hang all the law and the profits. I might write reams about salesmanship and the editor could blue pencil it down to those two fundamental principles. No other qualifications are necessary—either of these without the other will not bring success, and of these neither is greater than the other.

It is all very well, you say, to admonish tactfulness, but how are we to



Harry N. McConnell

know it in ourselves when we see it. Tact, in my opinion, is avoiding yesterday's mistakes (not only your own but all others) in today's problems. It calls for rigid self-analysis every night as to the reasons for the day's failures. Every successful salesman blames himself alone for his unsigned contracts. If John Smith doesn't sign up today, the salesman looks for the weak points in his attack. The next time he goes back to John Smith (and tact includes a knowledge of whether that return call should be tomorrow or next month) he wastes no time on convictions already established in John's mind. He establishes new ones.

If John has a conviction that a steam engine is better than a motor, the good salesman doesn't start in by trying to convince him of the reverse. He begins on the merits of the motor. He establishes certain new convictions in John's brain as to motor efficiency. Pretty soon John's old conviction about steam is forgotten—perhaps it is dead.

If you try smooth persuasion and it doesn't work, lie awake that night until you find out why. Blame yourself, don't blame your proposition. Electricity is the world's one flawless commodity. The fault *must* lie with you, or other salesmen would not be able to get customers similar to the one you are after. If coercion is needed, use it, but only as a last resort, for of all dangerous high explosives, coercion is the worst. It is only used to pry fossils from rock-ribbed conservatism. It is the dynamite of salesmanship and is safe only in the hands of experts. It is no tool for the beginner.

And don't bow down to that fetish called "front"—as many sales are spoiled by "front" as are made by it. Don't make a bluff if you can't make good when called. Salesmanship is like poker, but it is the show-down variety. Big words and big actions may stupefy your prospect temporarily—perhaps long enough to get a contract; but they can't keep that contract in force unless they are backed up by actual performance of promises.

Don't act as though the Electric Company was the biggest thing in town. If it is, it doesn't need to put on lugs. If it isn't, it's your business to get out and hustle to make it so, and that takes persistence. Of course, if everybody knew the virtues of electricity as well as you do, they would all become customers and you would be jobless. It is the mental density of the *hoi polloi* that makes you worth your pay. You are an educator, and when you think of the years you spent

in school and the time it took you to learn the little you did learn, you can't blame your prospective customers for being a bit slow in assimilating the infinite variety of facts and figures you have for him. If he is discouragingly unappreciative, think of the way your school teacher felt about you. But she was persistent. In proportion to her persistence is your conviction today that the world is round—and in proportion to your persistence will be the conviction of your community that electricity is the one thing that makes the world *go* 'round.

A Philadelphia Ad

This clever ad appeared in a recent issue of the monthly house organ published by the Philadelphia Electric Company. This little booklet always

Church Lighting

THE proper artificial lighting of churches has been, until recently, greatly neglected. Is your church illuminated Electrically? If not, do you and others of the congregation suffer the discomfort of a vitiated atmosphere and of eye strain?

Does your church look gloomy or inviting—is the attendance at night services what it should be? Do you know that the installation of Electricity would solve all of your illuminating difficulties, and that the cost of wiring and lighting is entirely within the means of your congregation?

We have information and estimates at your disposal—free of charge.

The Philadelphia Electric Co.

bears the title "If it isn't Electric it isn't modern," and is one of the most cleverly written and attractively arranged periodicals, in the central station service.

Electric Truck Goes Through Brick Wall

"An automobile truck, weighing five tons, got the better of its brakes yesterday afternoon while descending the grade on High street in Brooklyn and charged through two crowded blocks with the chauffeur, Joseph Smith of 472 Belmont avenue, tugging at the gear and yelling for right of way. It finally brought up with its nose against a warehouse in the Brooklyn navy yard. To get there it had butted through a brick wall 8 inches thick and 8 feet high and had ripped fifty feet of iron coping from the top. And the auto was scarcely damaged. A $50 bill will pay for all repairs."—*New York Sun*

The important point is not that the brake failed to work, for that was probably due to lack of care, but the slight injury sustained is eloquent testimony to the ability of the electric truck to stand hard knocks.

Influence of Street Lighting on Property Value

Some interesting figures come from St. Louis on the effect of improved street lighting on the value of abutting property. The Easton Avenue Improvement Association was formed not long ago, and through its efforts ornamental street lamp-posts were installed at intervals of 25 feet on both sides of the street along one commercial block. Current was furnished by the Union Electric Light & Power Co. It was not long before the good influence was apparent, for the business of the merchants was increased, vacant stores were rented, and at higher rental, while many merchants made various improvements in the premises to keep apace.

Before long an offer of $1,000 a front foot was made for the lot on the northwest corner of Easton and Taylor Avenues, which is the highest point on record for real estate in that section of the city. Real estate men and property owners do not hesitate to credit the improved conditions to the effect of the better street lighting.

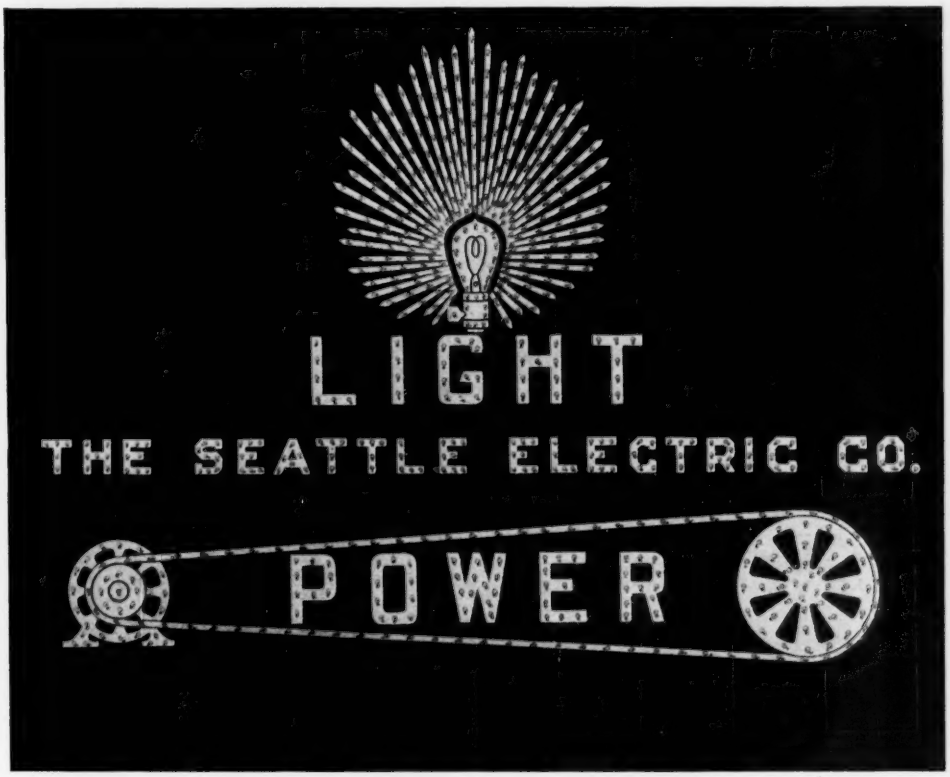
Another Central Station Sign

The Seattle Electric Company has recently installed a big sign on the roof of a high building in Seattle, Wash. This sign is 77 feet wide and 60 feet high. The words LIGHT and POWER are in letters 6 feet high, and the rays from the lamp are as long as 16 feet.

The flashing of this sign is exceedingly novel and interesting. The company name burns continually in natural lamps, and also the outline of the lamp and the motor, belt and pulley. Then the word LIGHT flashes on and immediately the filament of the lamp appears in red and the rays come on with a sunburst effect. Next the word POWER is flashed and the motor belt and pulley start revolving as the word LIGHT, the filament and the sunburst disappear. When the word POWER goes out the motor belt and pulley stop turning and the series is repeated. In all, about 2500 green, red and natural lamps are used in the display.

The sign was built by the Greenwood Advertising Co., Knoxville, Tenn.

It is not hard to form a mental picture of the forceful effect of this sign. It has a suggestive strength that convinces the public of the faith of the central station in the efficacy of electric advertising, and it keeps the subject ever fresh in their minds.



Brooklyn Edison Educational Work

The educational work which the Edison Electric Illuminating Company of Brooklyn has been carrying on for a number of years among its employees, will be continued during the 1910-1911 season along different and what is believed will be more effective and satisfactory lines.

A Scholarship Committee was appointed not long ago by Mr. Freeman,

the general manager of the company, and this committee, in co-operation with the faculty of Pratt Institute, have fixed upon the following courses at that institution, which may be attended by any Edison employee.

The courses are:

Practical Mathematics
Technical Chemistry
Industrial Electricity
Elementary Electricity and Practical Mechanics
Electric Machinery
Electrical Design
Mechanical Drawing
Machine Design
Mechanism
Steam and Steam Engines
Strength of Materials

An employee may select any one of these courses, starting with as advanced a class as his previous training will warrant, the subjects being so arranged, that those entering will not have to spend time on unnecessary matter, but will be taught just what they need to know in the line of study they take up.

The course runs for six months, beginning September 28, and the classes meet three evenings each week, from 7:30 to 9:30 o'clock.

Tuition fee is $15 a term, which may be paid in advance or in installments. At the end of each term the company will refund the cost of tuition to each employee who has completed the term with a fair average.

It is the intention of the company in this way to give everyone in the service an opportunity to receive a technical education which will enable him to advance more rapidly and increase his value to himself and the company.

The offer is open to every employee.

New Tungsten Deposits

It has been announced that a new deposit of tungsten has been discovered in Stevens County, Washington, from 40 to 75 miles north of Spokane. It is claimed that this is the most extensive tungsten field and the most promising yet discovered.

Horse Racing by Arc Light

At the Blair County Fair at Dell Delight Park near Altoona, Pa., horse races were recently held on several evenings. The race track was lined with arc lamps at efficient intervals and it was found that horse racing by night was quite as practical as by day. This is an interesting discovery, for it offers a means of greatly increasing the revenue from county fairs, since there is always a large number of people who are unable to attend during the day, but would be only too glad to at night. There seems to be an opening here for the central station.

A St. Louis Bank Sign

Here is the latest bank sign in St. Louis. The Union Electric Light and Power Company has been making a systematic campaign to interest the local banks and trust companies in electric advertising, and has met with

considerable success. This solicitation has all been by personal visit and all interested prospects are referred direct to the local sign manufacturers. The sign companies in St. Louis sell the sign, install it and furnish a service which includes current, lamp renewals, cleaning, repainting and turning the lights on and off each night. Current is purchased from the Union Electric Light & Power Co.

The Evolution of the Fixture

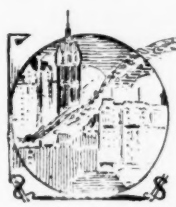
By P. E. Matteson

A few thousand years ago artificial illumination was obtained by suspending a receptacle of some kind from the ceiling and building a fire in it. Several centuries later candles were substituted for the older type of fire and the shape of the fixture was altered a trifle. Ensuing improvements in the methods of illumination induced only whatever slight changes were necessary to accommodate the different illuminants until today we are using for electric light that same suspended affair which the ancients found so indispensable for their purpose. The result is that nearly all the fixtures in use and for sale today are imperfect from an engineering standpoint and most of them are equally lacking in decorative qualities.

In striving for beauty and grace in the early days of gas and electricity, all fixtures were adorned with numerous curved arms which projected the lamp at all angles for no other apparent reason than to show that it could be done. The peculiarities of the tungsten lamp, however, has necessitated the straightening of these arms and the elimination of quantities of the attendant scrollwork which has been a long step in the right direction. But the arrangement of numerous lamps on a fixture, so popular in the days of candles and small electric lamps, is no longer necessary and should be avoided, since it is possible today to obtain single lamps of sufficient candlepower to replace the customary four or five lamps of the conventional fixture and with far better illumination.

The reason for suspending the lamps two or three feet from the ceiling is, of course, the result of several thousand years of effort to keep the fire away from the ceiling, but with the passing of the fire risk there should be a passing of the pendant, and the electric lamp should be placed near the ceiling where it belongs. Elimination of these relics of ancient times would then leave nothing but the single lamp per room held by some simple device in the center of the ceiling and provided with a reflector which would reflect, and not absorb the light. Fortunately such reflectors are obtainable and the procuring of suitable decorative ceiling pieces is not so difficult as it may seem. Many types of brass plates and fixtures are now made which add as much to the adornment of the room as any pendant type of fixture made, and in addition are a great deal more efficient.

A very promising fixture of the future is the plaster centerpiece. These decorative panels can be made in any shape or size, they can be added



DOLLAR IDEAS

A Window Display

A Massachusetts newspaper has hit on a scheme for window display that can be used to advantage by any central station. They have taken night photographs of a number of striking electrical displays on large stores and public buildings and printed them on glass. These transparent photos were then grouped in the show window against the glass so that the light from within the office makes them stand out plain and clear.

The display attracted a great deal of attention and suggests a good scheme for the central station to feature new sign and display installations and advertise electric advertising.

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to the ceiling after the house is finished or installed when the house is wired, and they can be painted any color and repainted frequently. Still another method of installing the light without a fixture would be to sink into the ceiling a lamp and reflector, allowing the lamp to protrude an inch or two below the ceiling. An opalescent bowl covering lamp and aperture would finish this unit so it could compete with the best efforts of the fixture designer, Many other fixtures of similar type are obtainable, highly efficient and at the same time, not so lacking in the usual brass and glass as to cause comment, and these fixtures should and will be used in future to a large extent as the public begins to realize what can be accomplished for better illumination.

Smoke Crusade in Glasgow

The Corporation of Glasgow (Scotland) Electricity Department has undertaken a vigorous crusade against

the smoke nuisance, and to demonstrate to the public that the use of electricity offers the most practical relief has recently held a "Smoke Abatement Exhibition." This was in effect an electrical exposition, and compared very favorably with our electrical shows in New York and Chicago. All the contractors and supply dealers were brought into cooperation, and the success of the enterprise is a very encouraging indication of a tendency toward greater publicity and more enlightened sales methods among the British central stations.

In connection with the exhibition, the electricity department issued a 68-page bulletin with 31 pages devoted to the description of electric appliances and the balance advertisements of various manufacturers. The accompanying illustration is reproduced from this booklet.

Forcing a Day Service

An interesting story comes from the small town of Reading, Ohio, of what practically amounted to the forcing of a day service by the representative of a manufacturer. The lever used was popular demand. A lamp salesman in talking with a local druggist one day was told that there was considerable complaint against the electric service since there was no power on during the day. But the plant was run by the town and the officials could not see the business to justify the day run, so there was apparently no hope. The druggist cited several possible power users, however, and expressed the belief that it would be a safe venture.

The salesman got in touch with the superintendent of the plant, and talked the matter over, finding him favorable but not able to act. So a few months later the lamp man returned with a motor salesman and a heating appliance man and together they gave a lecture and demonstrations at the city plant, talked personally to the leading business men, and through advertising and much conversation succeeded in arousing considerable interest in the subject, and effecting the organization of a local Business Men's Club.

The town was using natural gas

engines with gas at 25 cents, but with the Business Men's Club behind them they were able to go before the Town Board and finally secure its consent to the establishment of a day service. Before the plant was ready there was an assured load of between 50 and 100 flatirons and six motors ranging from 1 to 10 horse-power. The electric lighting rate was 6 cents.

Operation of Electric Vehicles

Abstract of Paper Read Before the Pennsylvania Electric Association

By W. A. Manwaring

There has been nothing more interesting and satisfactory in the last year or so, from an electrical standpoint, than the development of the electric vehicle, both for pleasure and commercial purposes. With the great volume of business the large concerns of the country are compelled to handle today, the horse-drawn vehicle fails to give the desired results. The electric runabout, for the use of the lady shoppers, for the doctor making his daily rounds, and for the business man around town, is as much above the use of the horse and carriage, as the electric trolley is above the old style horse-drawn car, not only for the factor of time saved, but for the great convenience, simplicity, cleanliness and safety of the electric over the horse-drawn vehicle.

We all know the delays occasioned by the use of horses, such as sickness, shoeing, showing favor to them in extremely hot weather, on account of ice covered streets, and a dozen and one other things. While the advantages of the electric vehicle are not thoroughly appreciated today, yet these advantages are so great that it will be but a matter of a few years when automobiles will have entirely superseded horses for ordinary commercial purposes. Enterprising and up-to-date houses will adopt the electric vehicle; reliable data will be obtained; improvements will be made; the vehicle will be standardized; and less enterprising houses will be forced to fall in line by virtue of the results shown in the progress of the electric vehicle, as a time saver, and as an advertising medium.

Note a few advantages the electric vehicle has over the horse-drawn vehicle:

—Covers more distance.

—Travels much faster.

—Requires less stable room.

—Requires less space on the street.

—Can be stored in, or near your warehouse.

—Reduces insurance.

—Can be worked every day.

—Can be worked longer hours.

—Less damage to streets.

—Makes congestion of traffic problems comparatively easy.

—Requires less delivery units, and does more work in less time.

—Is modern and a good advertisement.

—Can be equipped with a motor to pull cable, erect poles, etc.

—The battery can be used to advantage in furnishing current for light or power in temporary or emergency cases where it would be almost impossible to reach otherwise.

The central station manager will appreciate the fact that by encouraging the use of electric vehicles he will in a short time increase his revenue to a very marked degree, as in most cases the batteries are charged between the hours of 9 p. m. and 6 a. m., making an almost ideal off-peak load on account of its steadiness and continuity. The volume of business which a single electric vehicle furnishes to the central station in the course of a year is well worth securing. For example—a one-ton vehicle requires approximately 19 kw. hours per charge, while a five-ton vehicle requires approximately 47 kw. hours per charge. This

means for one vehicle alone from 5700 to 14,100 kw. hours per year, of 300 daily charges. This, multiplied by any number of vehicles, will make a very attractive showing at the end of each month. These figures are given, assuming that the battery is totally discharged every day, which, however, is not always the case.

The following data has been worked out from records of vehicles, batteries, and tires used in one electric light company's service, and may be of interest to those considering the adoption of the electric vehicle. I want to impress on you, however, that these vehicles were purchased in 1905 and 1908, and cannot be compared with the more modern and up-to-date vehicles of today.

Data on Batteries

Data, covering a period of twenty-four months, based on eleven one-ton capacity electric vehicles, purchased in 1905, weighing 6500 pounds, equipped with 168 ampere hour batteries, used in electric light company's service for service work and changing arc lamps:

Average number of days in service per month	24
Average number of miles traveled per month	409
Average number of kw. hours direct current per month	488.9
Average number of kw. hours direct current per mile	1.21

Data, covering a period of eighteen months, based on two three-ton capacity electric vehicles, purchased in 1905, weighing 11,450 pounds, equipped with 216 ampere hour batteries, used in electric light company's service for aerial line construction work:

Average number of days in service per month	23
Average number of miles traveled per month	207
Average number of kw. hours direct current per month	433.1
Average number of kw. hours direct current per mile	2.14

Data, covering a period of eighteen months, based on two three-ton capacity electric vehicles, weighing 10,400 pounds, equipped with 252 ampere hour batteries, used in electric light company's service, for aerial line construction work:

Average number of days in service per month	20
Average number of miles traveled per month	224
Average number of kw. hours direct current per month	450.1
Average number of kw. hours direct current per mile	1.94

Data, covering a period of eighteen months, based on one 1000-pound capacity electric vehicle, purchased in 1908, weighing 3800 pounds, equipped with 189 ampere hour battery, used in electric light company's service for carrying boxes, lamps, vacuum cleaners, electric fans, stoves, etc.:

Average number of days in service per month	20
Average number of miles traveled per month	602
Average number of kw. hours direct current per month	324.6
Average number of kw. hours direct current per mile	.715

Data based on 23-168 ampere hour batteries, used in the above eleven one-ton capacity vehicles:

Average length of time in service (months)	11
Maximum mileage	9282
Minimum mileage	4089
Average mileage	6190

Data based on 2-216 ampere hour batteries, used in the same three-ton capacity vehicles, weighing 11,450 pounds:

Average length of time in service (months)	24
Maximum mileage	7094
Minimum mileage	3562
Average mileage	5328

Data based on 2-252 ampere hour batteries, used in the same three-ton capacity vehicles, weighing 10,400 pounds:

Average length of time in service (months)	22
Maximum mileage	6299
Minimum mileage	6241
Average mileage	6270

Data based on 1-189 ampere hour

battery, used in the same 1,000-pound capacity vehicle:

Total length of time in service (months)..... 20

Total mileage.....9446

Data on Tires

Size	Computed on No. Tires	Average Time in Service	Maximum Mileage	Minimum Mileage	Av. Mileage
36x5	32	18 Mos.	12407	2979	7545
36x4	27	20 Mos.	11863	2295	8262
36x3½ Twin	18	19 Mos.	11157	6849	8976 .
36x4 Twin	16	17 Mos.	6924	1808	4060
36x4	2	14 Mos.	4065	3949	4007
36x7	6	19 Mos.	7596	1920	4795
36x3	2	19 Mos.	10999	10999	10999
40x3	2	19 Mos.	10999	10999	10999

The 36x5 tires were used on the rear, and the 36x4 and 36x3 1-2 on the front of one-ton capacity vehicles, weighing 6500 pounds.

The sixteen 36x4 twin tires were used on the rear, and the two 36x4 twins and the 36x7 on the front of three-ton capacity vehicles, weighing from 10,400 to 11,450 pounds.

The 40x3 tires were used on the rear, and the 36x3 on the front of the 1000-pound capacity vehicle, weighing 3800 pounds.

Another Sign of Popular Interest

The following quotation from a popular article which recently appeared in *The Saturday Evening Post*, is one more indication of the rapidly developing appreciation of the advertising powers of electric light. The article was a general talk to and about retail merchants and their methods and opportunities for publicity. This was the closing paragraph:

Brilliant illumination is a magnet in the store window. Lights sell goods. New York recently presented a good example of this. For years Broadway has been the "Great White Way," because it is a highway of lights. Fifth Avenue, even where the retail shops are, was well-nigh deserted. There were no lights in the windows. An enterprising electric-lighting concern that wanted to increase its business went to some of the Fifth Avenue shopkeepers and said: "You are losing business by not lighting up your windows at night. Let us put in a display and see how it goes." The windows were flooded with electricity and the fact was advertised on the motor buses and elsewhere. People were attracted to the windows at once; the traffic on the street increased, and business in the stores developed from it despite the fact that most of the stores were closed at night. The lights were good publicity.

Little by little this sort of recognition will drill its way into the minds of the people, until with the merchants and manufacturers it becomes a question of "What sort of electric advertising?" just as today they choose between newspaper or magazine. And there is no newspaper or magazine which will not freely further the movement if properly handled.

A Daytime Float

St. Louis has a Million Population Club, which recently organized a mammoth parade to portray the varied industries of the city, by means of floats, marching clubs and the like. The Union Electric Light & Power Co. entered a large float mounted on an electric truck. It was a difficult matter to make an impressive display without opportunity for illumination,

but the result was effective and well received.

The float consisted of a large paper mache incandescent lamp, eight feet high, with a washing machine and ironing board equipped with electric irons, both the latter operated by young women. At each side was a motor with the end of the pulley painted so as to show the motion.

N. E. L. A. Standard Classification of Accounts

The National Electric Light Association has issued as a bound volume, the Standard Classification of Construction and Operating Accounts, adopted by the Association in the years 1908 and 1909 as the standard classification of accounts recommended for the use of all member companies.

A number of companies are already using this plan, and the Association urges its adoption by all companies at an early date. The present tendency is toward commission supervision for public utilities, and it is thought that the general adoption of this system will influence future commissions to accept it in place of the burdensome systems that may be adopted if no general uniformity exists.

Realizing the difficulty that managers have in obtaining comparative figures, the Association considers creating a Statistical Department, to which a synopsis of monthly or annual reports could be forwarded for tabulation and distribution to member companies adopting the system. To this end it is not necessary that the names of the individual companies should be disclosed in distributing the statistics, but it is essential that the kind of fuel used, and its cost, should be given, together with any other essential features affecting the cost of production.

It is not intended that every company should use exactly the same number of sub-accounts, but it is expected that the eight main divisions will be used by practically all companies. The number of sub-accounts used would depend upon the size of the company, and it is believed that the entire list of member companies would divide into three or four divisions, such divisions being based upon the same number of sub-accounts. The Association believes that tabulation of operating results of the companies in each division showing comparative receipts per capita, costs per kwh. of fuel, labor and other items, would be of great value. Such tabulation can only be correct, and of value, when all companies included are using a uniform system of accounts, and it is therefore hoped that a large number of the member companies will adopt the National Electric Light Association system.

Enlarging the Anheuser-Busch Sign

The Anheuser-Busch Brewing Association of St. Louis, Mo., one of the pioneers in the use of large signs in various parts of the country, not only believe in constantly adding new signs to their list, but at the same time are enlarging some of those already in service. The Valentine Electric Sign Co., of Atlantic City, are about to erect a sign on their Norfolk branch which is much larger than the one at present in use, the Anheuser-Busch Brewing Association evidently feeling that the larger and better the sign, the more effective the advertising.

Building up a Day Load

By Theodore Bass, Farmington Electric Light Co., Farmington, Ill.

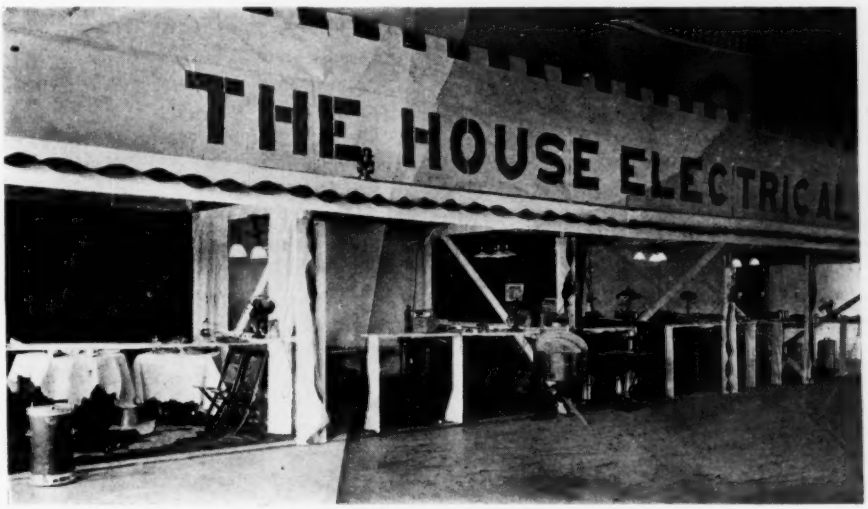
On March first we started day service. The only assurance I had that a day load in Farmington would be successful was that I was sure if people were educated to use electricity there would be enough to justify a day run. The question was to educate them. So we supplemented our advertising with a demonstration show, a partial view of which is reproduced here. (Page 211.)

The hall was 40 x 80 feet and the booths were arranged along one side representing a parlor, dining-room, bedroom, kitchen and laundry of "The House Electrical," in which every conceivable article of electrical apparatus pertaining to the home was on exhibition and demonstrated. The illumination was arranged in such a way that only reflected light reached the spectators on the outside of the booths, the lamps (60 16-cp. and 20 100-watt tungstens) being placed above the booths—show window style—the upper portion of the booths being separated from the main hall by opaque decorated millboard stenciled "The House Electrical."

The stenciled letters were backed with orange tissue paper and the top of the millboard was cut "castle effect"

or toothed and reached the ceiling. The light shining out through the openings, the illuminated letters and the brilliantly illuminated booths viewed from the otherwise unlighted hall made a pleasing effect. The interest shown was satisfactory indeed, for approximately 100 irons were sold and many other appliances were ordered, and we believe the results will pay the expense and trouble of the affair many times.

I am keeping right after my customers with advertising of different kinds and am impressing on their minds that first-class living is only possible with the use of electricity. Our night load was pretty satisfactory



The Exhibition which Paved the Way for Day Service

for we light *every* store in town, every church, every lodge room and—well we light the town. You can travel from one end of our town to the other on any one of three or four principal residence streets and find but three or four houses that do not have service wires from our lines running into them.

I believe that the only way to get the business is to give good service, and then "harp" about it and get everybody else to "harp" about it. When a man has a "kick" (and an electric light business without kicks is an impossibility) get right down and go to it. Find out just what's the matter, who is to blame, make it right and make him feel that he has had a fair hearing and a square deal. If he's wrong, spend enough time to thoroughly convince him. If he really has a kick coming, see that the cause is removed.

It seems to me that the manager of small plants as a rule takes too little interest in the efficiency with which the customer uses the current after he buys it. In visiting other towns the size of ours, I see 60 and 100-watt tungsten lamps hung without a shade or reflector of any kind, right in the line of vision and generally I see a lot of gasoline plants in the same town too. The central station, the large as well as the small and the small as well as the large, should, in my opinion, have control of the lamps. Tell the customers—and advertise—that when a lamp gets dim, they should bring it back and get a new one. Keep the voltage right and you will have no lamps returned that have not served their time.

Advertise, spend a little money! Do it judiciously, but do it! We send out a monthly bulletin furnished ot central stations by an advertising concern and it pays. It costs a good bit but it pays.

Then we sent out some monthly reminder calendars, with some little

saying on them. It soon got so that the day after we sent these out on each month, people would ask, "How much do you suppose it would cost to wire my house?" and if that fellow wasn't smiling in the light of a new installation inside of 48 hours it was our fault.

But we got about to the end of our lighting possibilities and went after the day load. Not a very big town and no factories and no one to use power, so it seemed, but we have only run a little over a month and have a 10 hp., a 7-1-2, a 5, two 3's and a 2 hp. motor running and no end of small motors, vacuum cleaners, irons and the like.

It seems as though the people have a kind of inertia for buying and using electricity and although they are a heavy body to get started and take a good push, they keep going with very little effort when they get started. We got them started with our Electrical Show and now they are going fine.

Domestic Appliances

Abstract of Paper Read Before the Pennsylvania Electric Association

By William A. Donkin, General Contract Agent, Allegheny County Light Co., Pittsburg, Pa

The phenomenal progress made in the past few years by many central stations in the development of new business, particularly power business, desirable on account of the demand coming at the off-peak period, has led us to overlook the possibilities for increasing the revenue from our existing installations. There are probably

Wm. A. Donkin

very few who would not spend considerable time and energy in securing a contract for power which would yield a revenue of $100.00 per month, yet the same revenue may be secured from small appliances as, for instance, the electric iron if a sufficient number of them are installed, and with the added advantage of no expense except for current.

The electric iron requires four hundred and fifty watts for its operation and we have learned from our records, yields on an average, $1.00 per month. If we consider one hundred irons placed with our various customers, the revenue from these would amount to $100.00 per month, and I dare say that there are very few central stations which could not, with a little energy, place one hundred irons with their customers.

Domestic Appliances as manufactured today can be divided into two classes:

First—Those which can be operated on the present lighting system, such as all small heating appliances, fans, vacuum cleaners and the like, which can be attached to any lighting socket.

Second—Stationary appliances, such as stoves, stationary vacuum cleaners, large family washing machines, and such appliances as require separate circuits.

Unquestionably the best revenue producer of all the small appliances is the electric iron, which is manufactured in all sizes from the small three and one-half pound traveling iron to the twenty-five or thirty-pound tailoring iron, and the general conditions

covering the introduction, sale and maintenance of the electric iron applies to all the many appliances manufactured for domestic use.

In discussing the methods employed by various other companies, the writer has noted considerable variation in the lines followed. For instance, some companies make it a rule when installing electric light for domestic purposes to leave an iron with the new customer. While in some cases this might result advantageously, the customer retaining the iron and being educated to the use of additional apparatus, we have found, particularly in the natural gas territory, that the use of an electric iron by a new customer unfamiliar with its operation, together with the natural excessive use of light during the first month, runs up such a bill as to usually result in his abandoning the iron, forever, being antagonistic to the use of other electric appliances, and also curtailing the use of electric current for lighting purposes.

Our own method, which we have found productive of good results, is to canvass our residential territory with special solicitors, securing orders for electric irons, on a commission basis, the solicitor being instructed to secure an order and leave an iron wherever possible. While this soliciting on a commission basis undoubtedly places many irons which do not result in the customer retaining the iron, we have, however, found from actual experience that many of the customers who fought the hardest to avoid one of these irons, have been the first ones to pay the bill for the iron on presentation, and even in cases where the iron is returned after a month or two, the additional revenue derived from its use has paid the solicitor's commission and the introduction and use of the iron has opened up a way for future solicitation for various other appliances. After an iron is placed with a customer it is usually permitted to remain thirty or sixty days, when it is billed, it being entirely optional with the customer whether he retain the iron and pay for it, or return the same without expense, other than such current as he may have used.

During 1909, we placed in Allegheny County 2069 electric irons, more than one-half of which were kept and eventually paid for by the customer. In addition to this such a canvass will place a variety of other appliances, also, the advertising feature of such a canvass for other purposes than the installation of domestic appliances is well worth considering.

Several years ago when vacuum cleaners were being introduced, we endeavored to push the sale of them in our particular territory, but owing to the price of these machines being beyond the means of the average customer, we were unable to secure many orders. Realizing that the price asked for good portable vacuum cleaners ($125.00 to $150.00) is more than could be expected of the average resident, we organized a Rental Cleaning Department and purchased 25 machines, which we rented at $2.00 per day, delivering the machine to the customer in the morning and reclaiming it the same evening or the following morning. These machines were kept constantly busy and we have added to the number until we at present have 100 machines in use. While this, for the time being, might interfere with the direct sale of these machines, the revenue which we secure from customers who would not consider the purchase outright more than justifies this course and we believe that the introduction and use of the machines in houses of customers who could afford to purchase outright will lead shortly to direct purchases of such machines.

In operating in a territory with natural gas at 27 1-2 cents per 1,000 cubic feet we avoid all reference to electric heating appliances being cheaper to operate than natural gas, laying great stress, however, on the flexibility of the service, cleanliness, fire risk and the many other advantages.

While not exactly a domestic appliance, we might mention the mercury

arc rectifier for charging automobiles which usually run thirty amperes capacity. We make special rates for the current supplied for this purpose, provided the customer wires for and meters the current separately, also, with the stipulation that this particular service will only be used during our off-peak period. The average rectifier represents a load of nearly four kilowatts and the aggregate consumption of a few of these machines will produce considerable revenue.

The electric cooking stove in competition with natural gas does not meet with much favor, as, with the exception of a few isolated installations which are of a experimental nature, the installation of these appliances is hardly worth mentioning. The manufacturers, however, have been working for the past two years to produce an electric cooker on the fireless cooker system, and we believe that with development along these lines we will shortly be able to compete with natural as well as artificial gas. Electric washing machines meet with considerable favor, but owing to the high cost of the machines do not come into general use.

All these appliances are not only practicable but economical in operation if not abused, and it is only necessary to educate the public to their many advantages to ultimately secure their adoption in preference to other appliances. Many appliances, such as curling iron heaters, milk warmers, heating pads, sewing machine motors, etc., which cannot, by themselves, be considered heavy revenue producers, each one where installed and giving satisfaction will lead to the much freer use of electric service for lighting and other purposes. While in the past the possible revenue from domestic installations was limited to lighting, this condition is rapidly being changed and in many instances we have inquiries for electric service primarily for operating one or the other of these household appliances which has resulted in inducing the prospect to install electric light as well.

The maintaining of these appliances in proper operating condition after installation is one of the most important features of this branch of the service. The public in general is unfamiliar with the construction and detail of the various appliances and the inclination to abandon their use after some slight damage rather than to be put to the trouble or bother of repairing the article usually leads to its being abandoned altogether. This has been demonstrated, particularly in lighting, where during periodic inspections we find many sockets out of use simply because the customer neglects to replace burned out lamps with new ones, which we supply free of charge. Our inspectors in such cases refill the socket and many of the large companies maintain special maintenance departments, employing women as well as men, to make periodic inspections of the various installations for the sole purpose of going over the customer's installation and seeing that all appliances are in proper operating condition.

One of the frequent drawbacks to the installation of these small appliances is the present arrangement of interior wiring. The unsightliness of a coffee percolator, chafing dish or other dining room appliance connected by a wire to a handsome dining room dome, and the operation of a sewing machine motor or an iron by a wire suspended from the ceiling and run from some distant chandelier, we are all familiar with. The obvious way to overcome this fault is through the co-operation of the local architects and electricians towards the installation of proper wall and floor receptacles for operating such apparatus.

Advertising through local mediums, such as newspapers, street cars, circulars, etc., unquestionably increases the sale of small apparatus, as well as current consumption for other purposes, although there is no definite way of ascertaining the exact results secured from such publicity. In our particular territory, in addition to these means, we also advertise con-

stantly on from six to eight billboards located on the most traveled thoroughfares, and in addition spare no means to make our exhibit at the expositions, such as the Western Pennsylvania Exposition, the Business Men's Show, etc., as brilliant as possible. We advertise various appliances on the margin of our letterheads in addition to enclosing with our regular correspondence seasonable pamphlets pertaining to various articles.

As already mentioned, the direct results from advertising cannot be estimated. The sales of domestic appliances by our company in 1908, however, amounted to nearly double the sales of 1907. The year 1909 showed an increase in sales of 17 per cent over the year 1908, while for the seven months of the year 1910, the sales amounted to double the entire sales of 1909. Considering the fact that the panic occurred during the latter part of 1907 and early part of 1908, and also that Pittsburg has not even as yet entirely recovered from the effects of this panic, the foregoing figures tend to show the results which can be produced by educating the public along the lines outlined in this paper.

Refrigeration in Seymour, Ind.

How the Central Station Demonstrated the Advantages of Motor-Drive

By C. E. Layton, Seymour Public Service Co., Seymour, Ind.

During the spring of 1909, I succeeded in working up a strong interest in motor-driven refrigerator plants, among the suitable prospects in Seymour, Ind., but I decided that a practical demonstration was necessary. After a little inquiry, I found that there was such a plant in Marion and also another one driven by a gas engine. Although the motor-driven plant was much the smaller of the two it was giving the better satisfaction and showed up to the better advantage.

Arrangements were therefore made for a trip to Marion, and the following prospective customers were taken along — two wholesale meat dealers, one poultry shipper and one creamery operator. Upon reaching Marion, we proceeded at once to the motor-driven plant and were shown through by the proprietor. This gentleman was quite proud of his refrigeration system and took pleasure in explaining the different advantages of this cooler over the old ice box.

The plant had been running just about one year, during which time his expenses for electricity, ammonia, etc., had amounted to $115 as compared with a former yearly ice cost of $225. The machine had a refrigeration capacity of 3 tons per day, was running regularly and had not required any extra labor. The meats were cooled at an even temperature; and never came out with a slick coating as is usual with ice coolers and a varying temperature; neither was there a dependence on an ice man who was often late, permitting the ice box to become almost empty. The dirt and trouble of ice handling had been done away with also, these points and many others being ably handled by our friend, the proprietor, while the fresh, cool air and general appearance of the meats were a testimonial of themselves.

From there I conducted our party to the gas-driven plant and found conditions somewhat the same, but the appearance was not quite up to the standard of the former plant. Within about two weeks after our inspection trip, I succeeded in contracting with the poultry shipper for motor drive on a 10-ton refrigerating plant. This plant has worked perfectly from the start and after a year's operation no fault is to be found with it. Shortly after this, however, the creamery man decided to install a

plant, but upon the recommendation of the manufacturer, he chose a steam engine for power. In this case trouble was encountered from the beginning, and finally to take care of boiler repairs, the plant had to shut down for almost a month during the hottest period of the summer. It is working better at the present time, but is costing about 15 per cent more than it would have if operated by central station power and we have hopes of placing a motor there in a short time.

Several months ago, one of the wholesale meat men followed suit and after the experience of the creamery people we had no trouble in convincing him that our drive was the right thing. This plant gave entire satisfaction and another meat dealer has now contracted for a similar outfit. Also, we have some fine prospects in view among the ice cream makers, and are expecting a large growth of this business. We regard this business as highly profitable, as it is entirely an off-peak load and comes during the summer when other loads are lightest.

For purposes of comparison I offer the following data on the poultry plant and the slaughter house:

Poultry Plant

10-Ton Refrigerator Plant: Hours operation—Summer, 8 per day except Sunday; Winter, ½ to 6 per week. Space cooled—3 rooms—18 ft. x 20 ft. each. Average pounds of poultry cooled per day, 7500.

Slaughter House

6-Ton Refrigerator Plant: Hours operation as above. Space cooled, 9000 cubic feet. Meat cooled per week, 12 cattle at 950 lbs., 30 hogs at 180 lbs., 6 to 7 calves at 150 lbs., 4 to 5 lambs at 90 lbs.

Consumption of Electricity for Six Months

Poultry Plant		Slaughter House	
Feb.	682kwh.	Feb.	360kwh.
March	1002kwh.	March	486kwh.
April	1214kwh.	April	908kwh.
May	1166kwh.	May	804kwh.
June	1500kwh.	June	1067kwh.
July	1640kwh.	July	1170kwh.

DOLLAR IDEAS

WM. S. WALLACE
Rochester Railway & Light Co.,
Rochester, N.Y.

ON DIFFERENT occasions, three of our leading merchants have been unfortunate enough to have their premises and stock severely damaged by fire and water. In each case I was on the job as soon as possible, saw the proprietor and did everything I could to look after the straightening out of the electrical equipment, so that they were fixed up very quickly and were able to proceed with business.

When these fires occurred only one of the three was using an electric sign, but since that time both of the others have installed signs, due undoubtedly to the friendly feeling which we were able to create by showing them, at the time of the fire, that we took an active interest in their affairs. One of these men had formerly been very antagonistic, but his feeling changed entirely and instead of a "chronic kicker" he became a thoroughly satisfied customer.

The Manufacturers

Opalux Reflectors

Yielding to the increasing demands for Opalux Reflectors during the past two years, the Opalux Company of 258 Broadway, New York City, have extended the line by placing on the market three new types which are now available for all sizes of lamps. These new types include wide, medium and narrow angle reflectors which offer a choice of form best suited to the particular use to which the reflectors are to be put.

Figure 1 represents the wide angle reflector, recommended principally for

fixtures or lamps hanging high above the floor where a wide distribution of reflected illumination is desired. Figure 2, the medium angle type, should be used where it is desired to uniformly illuminate a large area, and the lamps are in or near the range of vision. Figure 3, the narrow angle reflector, is designed to concentrate the light for use where it is desired to entirely cover the lamp.

Opalux Reflectors are made of a glass with a special shell-like surface inside and are productive of remarkable efficiency without glare. They deliver a soft and comfortable, yet an abundant and even distribution of illumination which is especially adapted for work and reading. Ornate fixtures as well as plain commercial lighting units may be equipped with Opalux Reflectors, with absolute harmony as has already been shown in many installations in government buildings, schools, libraries, offices, churches and stores throughout the United States and Canada. These reflectors are as efficient as they are decorative and are recommended by illuminating engineers because of their wonderful reflecting qualities, by architects and decorators by virtue of their pleasing and attractive forms and by thousands of users who have tested their soft light under all sorts of working conditions. Opalux is called "The Glass without the Glare."

The Henry Thermo Demand Limit

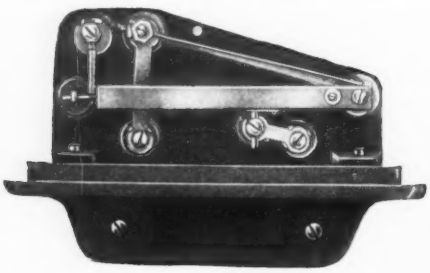
The present agitation regarding the rate question and the anticipation of practical tungsten lamps of much smaller candle-power than at present available is again bringing to favorable attention the question of so-called "flat rates." The gross unfairness of the fixed charge per month based on the number of lamps has caused an almost universal adoption of a meter basis of charge. With 10-cp. tungsten lamps in prospect, however, and possibly even smaller units, central stations are rapidly approaching a point where new lighting business secured on the present system may become unprofitable.

Among the most valuable suggestions for the maintaining of a fair revenue from lighting is the rate based on the maximum demand, whereby the customer limits his demand on the central station capacity, although his total consumption of current may be equal to that maximum demand for 24 hours a day if he so desires.

An ingenious, simple and inexpensive device for limiting the maximum demand automatically has recently

been placed on the market by the Henry Thermo-Electric Co., of Newport, Vt. It is known as the Henry Thermo Demand Limit, and when placed in circuit at the meter will cause all of the burning lamps to interrupt, if the total current exceeds the amount for which it is adjusted. The device is simple to install, being connected in one leg of the lighting circuit, moderate in price and rugged in construction.

The Henry Thermo Demand Limit makes and breaks the lighting current at contacts of non-arcing metal attached to a lever arm which is pivoted at one end. The arm is held down



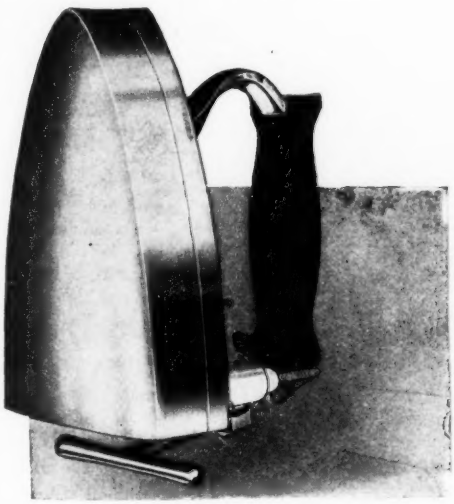
against the contact stud by the tension of a "Thermo" wire attached to the arm with a short leverage near the pivot. The tension of this wire is determined by an adjusting screw at its other end, the wire being about four or five inches long. An adjustable spiral spring tends to pull up the far end of the lever and opens the circuit at the contact plate when the tension of the Thermo wire is relaxed. The current passes in at one side of the instrument to the tension screw of the Thermo wire, through the Thermo wire to the lever, thence to the contact plate and the stud upon which it rests and from the stud out to the line. As soon as the current reaches the pre-determined limit the Thermo wire expands, the spring on the lever pulls it up and the contact opens, this interrupts the flow of current through the device and in the lamps. When the circuit is open the Thermo wire cools and lever is returned to its normal position. This operation is repeated and the lamps continue to interrupt until the overload is removed.

The apparatus is enclosed in a cast iron case 7 inches long and 3 1-2 inches high. The standard instrument may be used on any maximum from one to twelve and one-half amperes, either in connection with an integrating watt meter or by itself on a straight maximum demand per month rate.

Cutler-Hammer Heating Line

A new line of heating apparatus has recently been placed on the market by the Cutler-Hammer Manufacturing Company of Milwaukee, Wis. The equipment at present includes a full line of electric flatirons, a disc stove, curling iron, heater, shaving mug, two types of portable water heater, five types of electric water heater designed for permanent attachment to the water pipes, and three types of electric radiator. Later on there will be a full line of electric cooking utensils.

The Cutler-Hammer iron is of very sturdy and pleasing appearance.



The heating element is particularly efficient and distributes the heat uniformly over the whole face of the iron. A stand is provided on the back of the iron to rest it on when not in active use, and may be adjusted to hold the iron inverted to serve as an emergency stove.

The "ring and spring" connection is

a feature of the Cutler-Hammer iron. All users of electric irons know that the wear on the cord is greatest at the point where the cord is attached to the iron. Kinking and chafing at this point soon wears out the stoutest cord. The "ring and spring" connection prevents this.

The coiled spring covers several inches of the feed wire close to the iron, preventing the cord carrying current to the iron from kinking no matter how the latter may be moved. The feed wire itself is firmly attached to a metal ring surrounding one of the handle supports, this serving to remove all strain from the contact tips which, except for this, might be accidentally pulled off the contact posts which carry current to the heating elements.

The instantaneous water heaters are made in two sizes—a buffet heater intended for household use, and a bar heater. The glass globe of the buffet heater holds three quarts of water while the capacity of the bar heater is one full gallon. Either will furnish hot water in less than one minute by merely turning on the current.

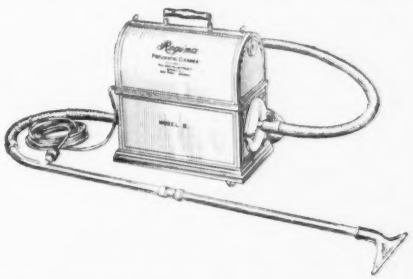
Starting cold the first glassful of steaming hot water can be drawn in 45 seconds after the current is turned on. A second glassful can be drawn 15 seconds later and so on until the globe is emptied.

There is also a very clever lavatory heater, designed for use on wash basins during the summer months when hot water is at a premium in many homes. The bath heater is a companion piece. Those of the cooking devices which have been exhibited are very interesting in design, there being several finished in antique copper effects.

The Regina Pneumatic Cleaner

Discriminating central station men who have investigated the merits of the numerous types of vacuum cleaners on the market will appreciate the advantages claimed for the new Regina machine. Of exceptionally small and light construction the Regina Electric pneumatic cleaner is strong and durable enough for the hardest rental service and will effectively fulfill all the ordinary "tests" to which this class of apparatus is subjected.

The Regina operates on the positive vacuum principle, that is, the air is drawn in by rapidly oscillating diaphragm pumps which produce a constant suction at the mouth of the tool no matter in what position it is held. There are two pumps running in cycles 180 degrees apart, so that one or the other is always drawing the dust and dirt into the nozzle. The motor is placed with its shaft horizontal, having one pump at each end operated by vertical connecting rods and ball bearing excentrics on the ends of the motor shaft. This duplex pump arrangement not only gives a steadier flow of air and greater volume but permits the compact arrangement shown in the illustration.



The motor is in the curved upper case, and the tops of the pumps about level with the center line. The square base contains the dust bag, which is of ample proportion for domestic use, and can be removed through an orifice at one end. The neck of the bag is attached to a ring of rather small diameter which prevents the dirt being blown about or dropped before it is thrown away.

A 1-4 hp. motor is used running normally at 1200 rpm. and giving 2400 impulses to the duplex pump. A safety valve or inlet prevents overloading the motor if the nozzle is stopped up.

The entire outfit, without the complete line of tools and nozzles supplied by the manufacturers, weighs only 47 pounds and its shape greatly assists the user when moving it about, par-

ticularly up and down stairs. By attaching the hose to the upper casing, a blower is produced for drying the hair, renovating feather pillows and beds, removing dust from intricate carvings or fretwork and other useful purposes. The company also makes a hand-operated cleaner for use where electric current is not available.

The reputation of the Regina Company's music boxes and other products is sufficient guarantee of the high class of material and workmanship to be found in the Regina pneumatic cleaner. Finished in gray enamel it is an attractive addition to any showroom and its many novel features make it an effective argument for more current sales. It is up to the central station man to keep his customers supplied with high class and satisfactory apparatus.—Writing the Regina Company, 17th Street & Broadway, New York, will not tend to reduce his standard.

New Sockets for Large Base Lamps

The advent of the new 400 and 500 watt Mazda lamp has created a demand for suitable sockets and fixtures

NO. 69

NO. 79

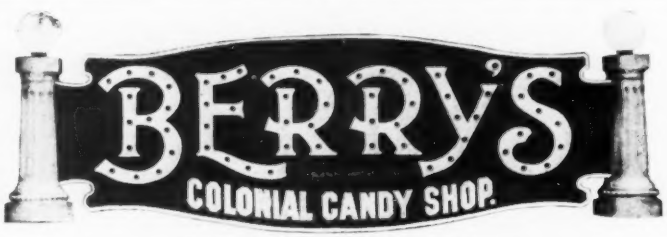
with large base receptacles. To meet these new conditions and thus remove the chief obstruction to their commercial introduction, The Benjamin Electric Manufacturing Co. of Chicago, has designed and placed upon the market a number of sockets and receptacles especially intended for large base lamps.

The accompanying illustrations show two sockets. The No. 69 is intended for use on low-voltage circuits not requiring cut-out or short-circuiting mechanism. No. 79 is a two-piece series cut-out socket with short circuiting center contact for high voltage street lighting circuits. It has side connections and will receive wires as large as No. 6. Both devices are adapted for attaching to a surface or bracket by means of screws passing through the base.

WANTED—Would like to correspond with companies desiring to increase business. Have had long experience in getting new business for central stations in some of the largest cities of the country and will conduct new business campaign on a basis of percentage of net increased income. Address "Opportunity," care of Selling Electricity, 74 Cortlandt St., N.Y. City.

WANTED—An illuminating engineer with long experience in business getting is open to engagement. Can organize or reorganize a commercial department and produce profitable business Plenty of ideas and the ability to carry them out. Address "Experience," care Selling Electricity, 74 Cortlandt Street, New York City.

WANTED—A man who can organize a commercial department and develop profitable new business in a city of the middle west. Will require an experienced and able man. Write full record and send photograph. Address "Executive," care Selling Electricity, 74 Cortlandt Street, New York City.



Do not neglect to send for our new 32 page catalogue, just out. It shows many new and attractive designs of small and large electric signs. You cannot afford to be without it and you can have it for the asking.

ORIGINAL COLONIAL DESIGN

HALLER SIGN WORKS, (Inc.)

704 So. Clinton Street, Chicago

OPALUX

"The Glass without the Glare"

Medium Angle 100-Watt Size

Combining Great Efficiency with Low Intrinsic Brilliancy

Substantially Constructed and free from the collection of Dirt

Narrow Angle 100 Watt Size

Try it in your own office and see for yourself

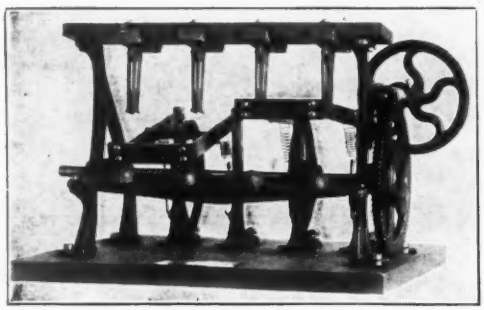
"The Glass without the Glare"

THE OPALUX COMPANY

Factories { Maspeth / Greenpoint } New York City

258 BROADWAY
NEW YORK

REYNOLDS KNIFE TYPE
FLASHER



The best low-price flasher on the market. Capacity fifteen amperes per switch. A thoroughly serviceable and reliable article. Heavy construction, copper switches, steel worms and machine-cut gears.

No. 220. List Price, $21.00

We build everything known in the motor-driven flasher line. We have the small machines in stock and can turn out the largest combination machines for spectacular effects in two to three days.

Write for trade discounts

REYNOLDS DULL FLASHER CO.
152 FIFTH AVENUE, CHICAGO

SOME TALKING POINTS THAT WILL SELL

Everson Cleaners
In YOUR City

Weight 35 lbs.

Price $80

1—Can be lifted by the little finger
2—Greatest effective suction
3—Safety valve to protect motor
4—1-6 H. P. Holtzer-Cabot motor
5—Indestructible vulcanized fiber case, non-conductor of electricity
6—No screws, clamps, or catches
7 etc.—On request

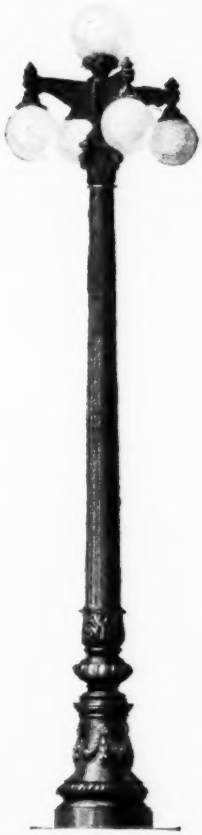
The Good Points of All
The Bad Points of None

Everson Mfg. Co.
30 Oliver Street

BOSTON, MASSACHUSETTS

Mott Lamp Posts

STANDARD OF QUALITY
Established 1828



2046 J

Ornamental Lighting Posts for all Purposes

SPECIAL TO CENTRAL STATIONS

We will be glad to co-operate with your New Business Department and submit special designs for Commercial Lighting Projects.

Send for our New Catalogue

The J. L. Mott Iron Works
118-120 Fifth Ave., New York

Street Lighting Fixtures

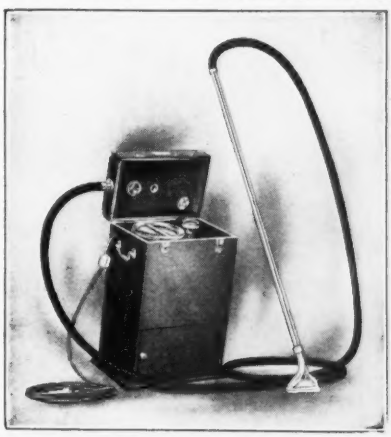
Design No. 39,704

A complete line of brackets described in circular 19. Send for a copy

THE ELMER P. MORRIS CO.
The Outdoor Lighting Specialty House
94 West Street New York City

The "IMPERIAL"

A Portable Vacuum Cleaning Machine combining efficiency, practicability and economy. Can be attached to any electric light socket.



"The only High-Grade, Efficient Machine on the Market." Guaranteed. A Dividend Payer for Central Stations. Growing concerns and responsible parties wanted as agents. Exclusive territory given. Send for Catalogue and particulars. M'f'd in 2 sizes.

Price, $100.00 and $75.00 Complete.

EMPIRE VACUUM COMPANY,
112 West 30th Street, New York.
District Office: 702 Postal Telegraph Building
Chicago, Ill.

A Central Station plant ought to be busy 24 hours—it doesn't have to sleep.
—*Thomas A. Edison.*

Electricity is the only thing I know of that has become any cheaper the last ten years.
—*Thomas A. Edison.*

The Central Station Development Co. of Cleveland, Ohio

is organized to

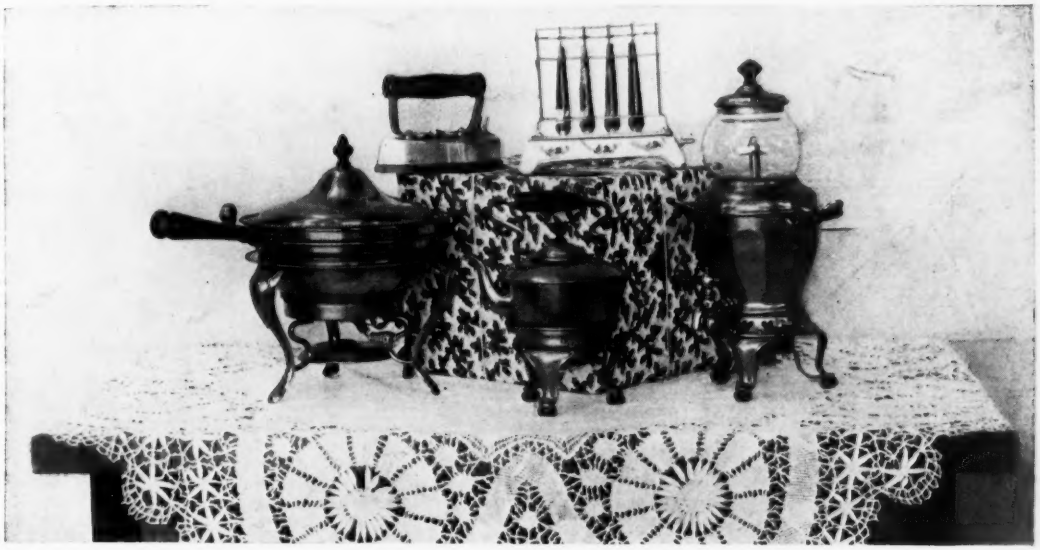
Assist and Supplement the Efforts of Central Station Managers

in the fulfillment of

MR. THOMAS A. EDISON'S AIMS AND AMBITIONS

There is absolutely no reason why horses should be allowed within the city limits. The cow and the pig have gone and the horse is still more undesirable.
—*Thomas A. Edison.*

So far we electrical engineers have given our attention to two-thirds of the clock; and between 10 p. m. and 6 a. m. have practically put up our shutters like a retail store—I am proposing to fill up the idle part of the clock.
—*Thomas A. Edison.*



More electric cooking devices can be sold at Holiday time—

than during the remainder of the year

90% of the yearly sales of *ordinary* chafing dishes, percolators and similar devices occurs at Christmas time. The holiday sale of chafing dishes *alone* approximates 10 to every thousand inhabitants. At this season, people are in the buying mood; they readily buy many articles ordinarily considered luxuries beyond their means.

Take advantage of this well-known tendency and this year sell *electrically* heated devices to those people who otherwise would buy the old-fashioned kinds.

Last Years' G-E Christmas Campaigns were marked successes

The wide-awake central station managers who realized the big possibilities of a ***real*** Christmas campaign last year and took advantage of our co-operative sales idea, achieved results beyond their expectations. Thousands of flatirons, toasters, percolators, chafing dishes, etc.—representing hundreds of kilowatts of connecting load—found their way into houses via the Santa Claus route. Lighting companies cashed in the impressions created by 11 months of consistent advertising and soliciting. Many managers reported that their shelves were cleared of a large stock of heating devices. Needless to say, these managers are enthusiastic advocates of a special Christmas campaign for electric heating and cooking devices.

You can easily conduct a Christmas campaign that will bring equally gratifying results.

Take Advantage of Our Co-operation. We have prepared two special combination packages particularly well adapted for showroom and window displays—*and sale.*

Toaster and Flatiron

Combination No. 1 includes our standard Radiator Toaster with ornamental base, hand painted design and our standard Calorite Leaf Unit Flatiron. Each device is packed in a separate box and the two boxes placed in a larger box which is wrapped in holly paper and sealed. This is a popular combination in every sense of the word.

The Radiant Toaster, with its special ornamental base of hand painted design which doubles its attractiveness, will sell readily, especially in view of the fact that it makes a decidedly unique and pleasing gift at a popular price.

Chafing Dish, Percolator and Tea Kettle

Combination No. 2 includes a Chafing Dish design S 1119, Percolator, design S 1808, and Tea Kettle, design S 73, each device in a separate box, wrapped as illustrated.

The design S Percolator, Tea Kettle and Chafing Dish were designed with special reference to the Holiday trade and present a particularly rich and ornamental appearance appropriate to the season's requirements. The three devices follow the same general design, thus making the combination especially harmonious and pleasing.

Of course any of the devices may be sold separately.

Combination No. 2 is especially effective for display purposes and is intended particularly for central stations where conditions do not warrant an extensive Christmas stock of electric heating and cooking devices.

Order combination 1 and 2 to-day and write for fullest details of our co-operative plan for your Christmas campaign.

General Electric Company

Schenectady, N. Y. **2798**

WHICH OR BOTH?

Are you supplying a SERVICE or simply selling a PRODUCT?

THINK IT OVER—IT'S ALL IN YOUR FRANCHISE

The Store Keeper sells a product—and shuts up shop when closing time comes. **You** have no closing time.

The Merchant can let customers wait while others are being served. **You** have to "Do it now."

The Hotel Manager says, "Sorry, we are all full." **You** have to furnish accommodation.

Yet you, Mr. Central Station Man, are selling electricity by the kilowatt hour as if it was in the same class as cloth or molasses.

And now the volume of your commodity is rapidly shrinking through the introduction of high efficiency lamps although the service remains the same. **With the volume shrinks your revenue but not your pay roll, taxation, interest, depreciation, insurance, maintenance, etc.**

All you have to fall back on is the extra capacity released with which to supyly new business

JUST HERE IS WHERE WE COME IN

The Mazda Controlled Demand rate is the entering wedge for new business, and our

DEMAND LIMITING DEVICE furnishes the best and cheapest means of applying it.

Henry-Thermo Demand Limit. Simple, Durable, Practical.

A new customer once secured for purely lighting service is in line to be educated by your Commercial Department to an appreciation of a full electrical service of Light, Heat and Domestic Power, and if tactfully handled, he can in time be brought to understand the rational method of charging for **Service, Demand** and **Metered Consumption,** the most equitable way that a full electrical service can be sold.

A post card to-day will bring you printed matter on the subject and if you ask for it a sample of our instrument for thirty days' trial, with full instructions for operating it. Address

HENRY-THERMO ELECTRIC CO.

3 SCOTT AVENUE, NEWPORT, VT.

THE services of a thoroughly experienced electrical Illuminating Engineer will do wonders for your commercial department—put the organization on a higher standard of *illuminating efficiency*. Ultimate profits from lighting business depend on satisfying installations.

Seven years exclusive experience in this work, absolutely independent of any manufacturer's interest, is proof of my ability to produce practical benefits. I am ready to undertake this service for central stations for such periods as the situation demands.

Public lectures and helpful instruction and assistance to your salesmen will develop profitable lighting business beyond your belief.

WILLIAM S. KILMER, 74 Cortlandt St., New York City

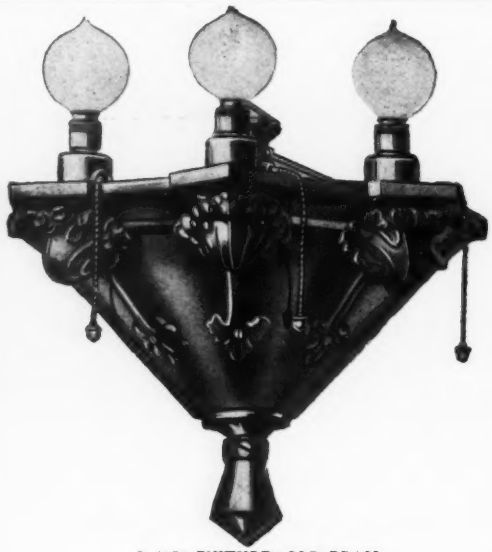
The Ham Attachment

Most convenient wiring device brought out in the last decade

For sale by all jobbers

Patented November 17, 1908

E. W. HAM, 5 Barton Place **Worcester, Mass.**



D 3971 FIXTURE—OLD BRASS

Williamson Way

Fixtures that represent character, honestly made, always up to date, and with the latest designs, are at your service.

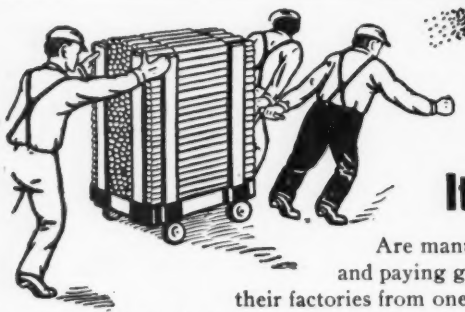
Our facilities consist of the the largest factory of its kind, ever ready to handle your contracts, large or small, and more than all an organization whose one strenuous aim is to satisfy.

R. WILLIAMSON & CO.

Manufacturers of

Electric Combination Fixtures and Art Glass Shades

Washington and Jefferson Sts., Chicago, Ill.



STOP THIS

It Will Pay You To Do It.

Are manufacturers in your locality wasting valuable time and paying good money to have unfinished work hauled around their factories from one machine to another? Why don't they locate their machines where the work is? "Impossible," they say, "can't run line shafts and belts there." That's the point exactly—and your opportunity.

EQUIP THEIR MACHINES WITH FORT WAYNE MOTORS

and they can locate them anywhere. The chances are they will save from 35% to 50% of the power they are now wasting in transmission, and even more when only a part of their machines are running. They can dispense with an engineer, save floor space, get rid of the cumbersome shafting and belting, and pay for just the power they use You can easily convince them that they will save the price of the motors in a short time and greatly increase the quantity and quality of their work. BUT—there's a big difference in motors and it won't pay you to sell them any but the **best.** Our FREE bulletin, "Motor Drives," gives the whys and wherefores.

FORT WAYNE ELECTRIC WORKS

1604 BROADWAY, FORT WAYNE, INDIANA

Factories: Fort Wayne, Indiana, and Madison, Wisconsin

Branches: All Large Cities

Send Today for 24 page Bulletin "Motor Drives"

M 7

Westinghouse

"WIRE TYPE" (Single Filament)

100 Watt

Tungsten Incandescent Lamp
FRAGILITY DONE AWAY WITH

The Latest Development in the Art—**Strong, Durable** and **Uniform.**

Westinghouse Lamp Company,

General Offices and Works **Bloomfield, N. J.** P. O. Box 128

NEW YORK WORKS: 510-532 West 23d St., NEW YORK CITY

SOLD BY

WESTINGHOUSE ELECTRIC & MFG. CO.

Sales Offices in all Principal Cities.

Let Electricity Do Your Family Washing

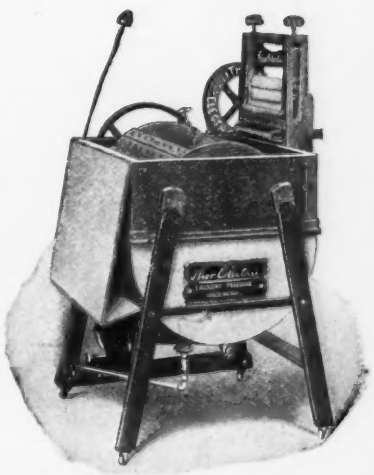
Why not join the other 1543 electric light company officials who are having their washing done with a

THOR

Surely you cannot hesitate to at ***least investigate*** the merits of the ***THOR*** in the face of such evidence as this. If you want to have your family washing done more thoroughly—in less time—at a lower cost—at least give the ***THOR*** a trial at our risk.
And every ***THOR*** means another motor.

This Coupon Brings FREE Booklet

This is ***your*** opportunity to cut down your fixed household expenses—and you are the man that pays the bills. Detach and mail us the coupon ***now.***



COUPON

Hurley Machine Co. 29 S. Clinton St., Chicago.

Gentlemen: Without further obligation on my part send me Free THOR Electric Home Laundry Machine Booklet.

Name .....

Address .....

Cat. No. 69 Multiple

Sockets for Large Base Lamps

Cat. No. 79
Series Film Cut-Out

Socket No. 69 is a one-piece multiple socket intended for use on low voltage circuits not requiring cut-out or short-circuiting mechanism. It has spring center contact, wires lead in at the sides, and binding screws are accessible from the central opening. **Socket No. 79** is a two-piece series cut-out socket with short-circuiting center contact for high voltage street-lighting circuits. It has side connections and will receive wires as large as No. 6.

Adapted for Attaching to Surface or Bracket by Screws
Fittings Supplied Tapped for ½" or ⅜" Iron Pipe

WRITE FOR DESCRIPTIVE LITERATURE

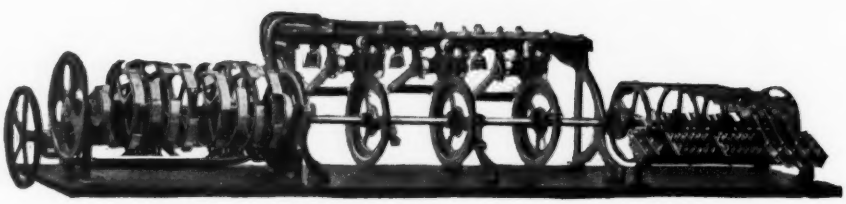
Benjamin Electric Manufacturing Company

New York
27 Thames Street

CHICAGO
120-128 So. Sangamon Street

San Francisco
151 New Montgomery Street

A Thousand People Notice a *Flashed Electric Sign* While Few See a Steady Burning Kind. Isn't this a Fact?



Our line is complete, goods are high-grade and prices right.
Secure new bulletins.

Reynolds Electric Flasher Mfg. Co.

Largest Manufacturers of Flashers in the World

New York Office
1123 Broadway

Factory and Main Office, 191-193 Fifth Ave., Chicago

Interior of Bergendahl's Confectionery Store Lighted with Holophane Reflector-Bowl Unit and Mazda Lamps

Don't Forget the Confectioner

The confectioner keeps open late—especially between now and New Year's Day. He is a long-hour customer. His business is about as profitable as any you can secure.

But the confectioner is generally poor; that is to say, his margin of profit is small and he is compelled to watch expenses closely.

Give the confectioner "a run for his money" by equipping his store with Holophane Glass. It means economy for him—it means a satisfied customer for you—it means that no competitor can get the confectioner's business away from you.

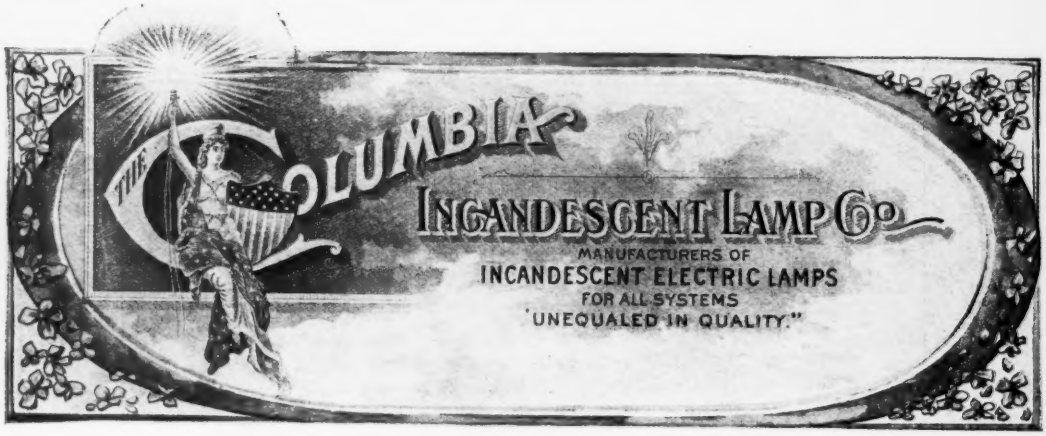
In the current issue of our publication "Holophane Illumination" is a description of a fine confectionery store installation. Have you seen it? Write for a copy—free.

HOLOPHANE COMPANY

Sales Department

NEWARK, OHIO

New York **Boston** **Philadelphia** **Chicago** **San Francisco**



MEN!

Central Station Men what is the reason you do not have more than 20 per cent. of the residences on your circuit? 80 per cent. still using oil, gas and candles and not using electric light. These figures are according to Census reports and are authentic. There are ten times as many houses as stores or shops, still residence lighting is neglected. Has your new business department made a strong, pointed effort to interest every householder in your service?

Have you used

COLUMBIA MAZDA LAMPS

and Columbia direct advertising to accomplish results among the residences? They are at your service. They will increase your load and increase your revenue. Write for our advertising proposition. Let us help you forget the fear you once had of Mazda lamps. They are not against you, they are for you.

Columbia Incandescent Lamp Company
ST. LOUIS, MO.

ESTABLISHED 1889

Main Office and Works 2115-2116-2117 Locust St.

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EXPERIENCE COUNTS

¶ We are among the few pioneer electric sign manufacturers and have followed each step from the first crude signs to the present stage. We have studied the customer's interests.

¶ The sign that makes an impression is one of individuality—the sign with character. We have always built the *special sign*, concentrating every effort in this direction and bringing out new effects in the smaller commercial electric sign, for which there are the greatest demands. We have also kept pace with the requirements of the larger advertiser.

¶ Ask us for designs and quotations. Let us show you.

Greenwood Advertising Co.

KNOXVILLE, TENN.

Federal Signs for Theatres

A Federal Theatre Sign in Lexington, Ky.
Dimensions 18 x 13 feet. Operated by flasher

November is the month to get theatre sign business.

Theatres, especially the small ones, find their revenues doubled by a bold, striking electric sign. A Federal Theatre sign is not an expense but an investment that pays big dividends to the owners. Line up the theatres in your town now. Let us work out original designs for you. We will gladly furnish sketches and estimates.

Write for new illustrated Display Sign Bulletin No. 233.

Federal Electric Company
Manufacturers
Lake and Desplaines Streets, Chicago